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# THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY, U. S. DEPARTMENT OF AGRICULTURE  
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## GENERAL NOTES

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Pressure of Work Delays Survey.-- An unusual pressure of work, beginning with activities in connection with the North American Wildlife Conference held in Washington February 3 to 7, has resulted in an unfortunate delay in issuance of THE SURVEY. Preparation of the material in the Division of Public Relations has also been seriously interfered with by the retirement of Lisle Morrison and the subsequent doubling up of the work of other members of the Division, pending the appointment of an additional employee. The delay, however, has revealed a widespread interest in and demand for THE SURVEY among members of the Bureau, and it is felt more strongly than ever that the house organ serves a most useful purpose. With the needed help in sight, the editors feel confident that issuance will from now on be on a monthly basis.

Chief in the Field.--Mr. Gabrielson left Washington on May 19 for a tour of inspection of field offices and refuges in the West. He had returned to headquarters on May 6 from a trip that included a talk before the Restoration and Conservation Federation of Missouri in St. Louis on April 10, the Wichita game-management conference in Cache, Okla. (see page 37), the Izaak Walton League convention in Chicago on April 17 (see page 2), the Bureau's predator and rodent control conference in Denver, Colo., on April 19 (see page 49), and visits at refuges in Nebraska, North Dakota, South Dakota, and Minnesota. On March 23 Mr. Gabrielson left on a trip south, his itinerary including Pea Island, Bull Island, the Savannah River Refuge, and the St. Marks Refuge. He conferred at Atlanta, Ga., with a number of State Game Commissioners and inspected the quail work being done by Herbert L. Stoddard in Georgia. He spent one day in Daytona Beach, Fla., with J. V. Kelsey and returned to Washington on April 6. On January 5 Mr. Gabrielson was in New York conferring with various State officials regarding cooperative work and on January 18 in Boston attending a meeting of the Massachusetts Wildfowlers Association.

Associate Chief in the West.--After attending the Izaak Walton League convention in Chicago and the Bureau's control conference in Denver, Mr. Henderson met with representatives of the Public Health Service and other organizations in San Francisco, Calif., to discuss means of preventing the further spread of sylvatic plague. On his return trip Mr. Henderson inspected a number of refuges in North Dakota. He also stopped at St. Paul, Minn., to discuss the Mud Lake Refuge with the Director of Conservation and made a short visit to the Upper Mississippi Wildlife and Fish Refuge.

Represent Bureau at Mammal Meeting.--Five papers were presented by Biological Survey scientists at the eighteenth annual meeting of the American Society of Mammalogists, held at the Academy of Natural Sciences in Philadelphia May 12 to 16.

Arnold L. Nelson reported on studies of the spring and summer food of gray foxes in Virginia, and Leon Kelso discussed food habits of the prairie dog. Dr. G. W. D. Hamlett spoke on the reproductive cycle of the coyote, and Arthur H. Howell presented notes on the distribution of the red squirrel. All these papers were illustrated with lantern slides, and Mr. Howell also exhibited specimens from the Survey's collection. Vernon Bailey described improvements in his traps for taking animals alive and uninjured. He exhibited and demonstrated the traps, and presented lantern slides and motion pictures as additional illustrations. A paper, "Observations on wildlife conditions in Mexico", by E. A. Goldman, who was not present, was read by title.

Other papers of special interest to Bureau members included one by Francis Harper, former Survey employee, on the larger mammals of the Okefinokee Swamp, which is being acquired as a sanctuary by the Survey, and an outline of biological national monuments and wildlife conservation, by Victor H. Cahalane, of the National Park Service, which included frequent references to the Bureau's work in establishing reservoirs for big-game animals in the West. Of unique historical and personal interest was a discussion of winter pelages of some North American shrews by Morris M. Green, formerly on the Bureau staff, who exhibited specimens collected 50 years ago by C. Hart Merriam, first chief of the Survey, and told of Dr. Merriam's early influence.

The committees on economic mammalogy and on conservation of land mammals included in their reports commendations of Mr. Gabrielson's advocacy of a 5-year breathing spell for the marten, fisher, wolverine, and otter.

All officers of the Society were reelected, including Dr. H. H. T. Jackson, on the board of directors; Miss Viola S. Schantz, treasurer; and E. A. Preble, one of two vice presidents. Arthur H. Howell was elected a director in the place of A. B. Howell, who as chairman of the editorial board has become a director ex-officio.

The Biological Survey representatives at the meeting also included Mr. Henderson, Dr. J. E. Shillinger, C. H. M. Barrett, Clarence Smith, and Howard Zahniser.

Following the meeting in Philadelphia, Mr. Howell and Mr. Zahniser observed wildlife conditions in the pine barrens near Mays Landing, N. J., in company with a party that included E. A. Preble, Francis Harper, and Remington Kellogg, former members of the Survey. Their observations included a great blue heron rookery with 22 nests.

Tells Waltonians of Wildlife Program.--Mr. Gabrielson on April 17 outlined the Bureau's national wildlife program at the fourteenth national convention of the Izaak Walton League of America, held in Chicago, Ill. The Survey was also represented at the meeting by Mr. Henderson and H. P. Sheldon.

Asks Breathing Spell for Four Fur Animals.--A five-year breathing spell for the marten, fisher, wolverine, and otter to save them from joining the list of extinct wild animals was urged by Mr. Gabrielson in a press statement released on March 27. These fur animals, the Chief pointed out, may share the fate of the passenger pigeon, the heath hen, the Maine giant mink, and other extinct species unless the hunting and trapping season on them is closed for five years. Game and conservation officials in States where these animals still live were asked to provide a five-year close season on them. "Several States have laws providing close seasons on these animals, but broader protection is needed," said Mr. Gabrielson. "These fur-bearers never were very abundant, and their pelts always have sold at prices high enough to cause close trapping. They have disappeared entirely from much of their former range."



Wallace Names New Research Head for U. S. D. A.--Appointment of Dr. James T. Jardine as Director of Research for the Department was announced on March 24 by Secretary Wallace. Dr. Jardine has served as Chief of the Office of Experiment Stations in the Department since September 15, 1931, and will continue in this capacity. As Chief of the Office of Experiment Stations and Director of Research, Dr. Jardine will now be responsible for three major activities. As head of the Office of Experiment Stations, he will administer Federal grants to the States and Territories for the agricultural experiment stations, and coordinate this work with similar research of the Department. As Director of Research for the Department, he will cooperate with the bureaus in planning and coordinating their research work. As a third function, he will have general administration of a Special Research Fund made available by the Bankhead-Jones Act, approved June 29, 1935, including the planning and coordination of the research program of the Department under this fund.

Talks at New England Game Conference.--Mr. Gabrielson discussed various aspects of the Bureau's wildlife program in an informal talk on the Biological Survey and the public, delivered on February 15 at the eighth annual New England game conference in Boston, Mass. Mr. Henderson, J. Paul Miller, Jr., and Paul D. Dalke also represented the Bureau at the conference. Included in Mr. Gabrielson's remarks was the following anecdote that may be of peculiar interest to field men of the Survey:

"I am glad to come back to New England," said the Chief. "I have not been here for many years, but my first task in the Survey, which was assigned me over 20 years ago on the first of April, was in New England. I spent the entire summer of 1916 in this region, mainly in Connecticut, Massachusetts, and Rhode Island.... I recall that on one of my rambles I was engaged in collecting beetles for a friend in Washington who had requested me to send him any specimens I might come across... I came on a dead deer that was pretty well decayed and covered with beetles. With a handkerchief tied over my face I collected a bottle full from the carcass. While I was doing this a man came along and watched the operation curiously. When I had finished he said:

"'Young man, do you do that for fun, or do you make your living that way?'

"'Well,' I replied. 'I guess you can call it that I make my living this way.'

"He was profanely astonished to find that anyone would waste time doing that sort of work, and invited me to come along with him to his house where he promptly took me down into the basement which was lined with rows of wine bottles.

"'Young man,' he exclaimed. 'Help yourself! Anyone who can do that sort of thing for a living is entitled to a drink.'"

Reviews Results of Wildlife Conference.--Following the North American Wildlife Conference held in Washington February 3 to 7, Mr. Gabrielson on February 14 reviewed the results of the meeting for the radio audience of the National Farm and Home Hour. His talk, which is available in mimeographed form, included a summary of the National wildlife program outlined by the Chief on the closing day of the conference. "The conference," Mr. Gabrielson told his radio audience, "accomplished these aims: It tentatively organized a general federation of wildlife interests. It put on record many special papers and discussions. It took steps toward the formulation of a National Program." In summarizing his proposed program, the Chief listed the following seven essentials:

(1) We need land for the restoration and use of wildlife. (2) We need closer cooperation between Federal and State agencies. (3) There must be a closer coordination of the activities of Federal land administrative agencies. (4) Our program calls for the recognition of wildlife values by land-management agencies, both public and private. (5) Pollution of waters must be stopped or reduced to a nondestructive point. (6) Research on wildlife problems should be expanded. (7) We must not overlook the importance of basic protective legislation and regulations, and these must be drawn to meet the needs of wildlife, not merely the wishes of groups of special interests.

Before the conference, on January 24, Mr. Gabrielson also spoke to the radio audience on the prospects and needs for a successful conference.

Bureau Members Work for Conference Success.— The Biological Survey put all of its available energy into preparations for the Wildlife Conference and cooperation during the meeting. The Bureau's motion pictures were included in the longest continuous showing of wildlife movies ever known, and members of the Division of Public Relations assisted in assembling films from other agencies. The Bureau extended similar cooperation in arranging for the exhibit display in the Mayflower Hotel, and in setting up one of the largest collections of Bureau exhibits ever shown.

Mr. Gabrielson was chairman of the work committee and a member of the banquet committee. Mr. Henderson was chairman of the program and invitations committees and a member of the work and general sessions groups. H. P. Sheldon was a member of the work and exhibits committees.

In addition to the address by the Chief, the following papers were presented by members of the Survey staff:

Logan Bennett discussed the development of farm-sportsman cooperatives in Iowa at a special session on such cooperatives.

At the special session on upland wildlife research, J. Paul Miller, Jr., told of the Pillsbury game management project in New Hampshire.

W. L. McAtee presented a paper on forest and wildlife management at the session on forests and forest wildlife, of which Dr. H. H. T. Jackson was chairman.

The session on wildlife disease and population cycles research included a paper entitled "Progress Report of Wildlife Disease Studies for 1935", by Dr. R. G. Green, of the University of Minnesota, and Dr. J. E. Shillinger, and also one entitled "Discovery of the Organism of Ulcerative Enteritis," by Dr. L. C. Morley and Mrs. P. W. Wetmore. Dr. Shillinger was chairman of this session.

At the session on research in waterfowl problems, four members of the Bureau presented discussions--Logan Bennett on Iowa waterfowl nesting studies, Clarence Cottam on the status and prospects of eelgrass and other waterfowl foods, Dr. W. S. Bourn on mosquito control and waterfowl, and Frederick C. Lincoln on studies in waterfowl abundance. Mr. Cottam and Mr. Bennett were also members of the committee in charge of the session.

Mr. Lincoln spoke on the effect of oil pollution on waterfowl at the session on pollution.

At the session on practical wildfowl management J. C. Salyer discussed practical waterfowl management and W. F. Kubichek spoke on the subject "The CCC Rehabilitates Waterfowl Habitat." W. L. McAtee was chairman of the session.

Frank G. Ashbrook was a member of the committee for the session on fur resources management. There were no set speeches at this session, but Mr. Ashbrook has had the results of the meeting mimeographed and made available.

The final special session, on the problem of vanishing species, of which Dr. T. S. Palmer was chairman, included a paper by Dr. Walter P. Taylor on the pronghorn antelope in the Southwest.

Treaty with Mexico Negotiated.--A convention for the protection of migratory birds and providing for a system of permits for the control of transportation of migratory birds and game mammals over the Mexican-American border was signed by representatives of the two Governments on February 7, and announced that day at the North American Wildlife Conference in Washington by Senor Juan Zinser, Chief of the Mexican Department of Forestry, Game, and Fish. The Treaty was ratified by the United States Senate on April 30.

Talks at Cosmos Club.--On January 13, Mr. Gabrielson spoke at the Cosmos Club in Washington, D. C., on wildlife. He substituted for Mr. Darling, who was scheduled to speak but was unable to be present.

To Head Forest Service Wildlife Activities.--The appointment of Dr. Homer L. Shantz, president of the University of Arizona, to be Chief of the Division of Wildlife Management of the Forest Service, was announced on January 3, to become effective June 1, 1936. The Division of Wildlife Management was recently expanded under the reorganization program of the Forest Service. Formerly coupled with range management, it was put into a separate division to operate under the Branch of National Forest Administration. Dr. Shantz will launch an expansive program of critical analysis of conditions, resources, and demands of wildlife on the national forest areas. Under his direction, there will be developed wider management plans for wildlife in coordination with other national forest resources.

Former Chiefs Frequent Visitors.--Jay N. Darling and Paul G. Redington, former heads of the Survey, have been frequent visitors in the Bureau's Washington offices recently.

#### ADMINISTRATION

Memoranda to Field Offices Issued.--The following memoranda to field offices have been issued in the "Administrative Field Office" (Admin. F. O.) series since the last issue of the Survey:

- No. 66. Sending personal messages by telegraph, cable or radio. (December 2.)
- No. 67. Consolidated contracts for gasoline, fuel oil, and Diesel engine oil requirements in the United States for the fiscal year 1937. (December 4.)
- No. 21. (A) Revision of Standard Form No. 33 (bid form). (B) Important new conditions for certain bids. (Amendment No. 4 to Admin. F. O. Memo. No. 21.) (December 9.)
- No. 56. Transportation requests and bills of lading chargeable to ERA and ECW Funds. (Amendment No. 1 to Admin. F. O. Memorandum No. 56.) (December 9.)
- No. 68. Submission of annual property returns. (December 9.)
- No. 69. Employment of U. S. Deputy Game Wardens and U. S. Deputy Reservation Wardens. (Mailed to Regional Directors, Division of Game Management, and Superintendents of Refuges, Division of Migratory Waterfowl). (December 9.)



- No. 70. Excusing Federal employees from duty at 1 p. m. on December 24, and at 1 p. m. on December 31, 1935. (December 16.)
- No. 71. Submission of itinerary reports with certain letter of authorization pay rolls. (December 18.)
- No. 72. New requirements in connection with submission of Employees' Compensation Commission Form CA-2 in cases of injuries to Government employees. (December 24.)
- No. 73. Transfers of employees from other departments or agencies to positions under emergency appropriations. (December 31.)
- No. 74. Estimates of requirements for lubricating oil under Navy contracts for the fiscal year 1937; recommended grades of oil for automobiles, trucks, and motorboats. (December 31.)
- No. 53. Report of violations of Eight Hour Labor Law by contractors and subcontractors. (Amendment No. 1 to Admin. F. O. Memorandum No. 53.) (January 2.)
- No. 75. Numbers and identification marks on Bureau boats. (January 3.)
- No. 76. Employment of personnel under letters of authorization; authority to employ unskilled labor up to 90 days without formal appointment. (January 10.)
- No. 76. Amendment No. 1. (February 12.)
- No. 77. Application of Bituminous Coal Conservation Act to procurement of bituminous coal (including lignite) and to contracts for any public work or service. (February 5.)
- No. 78. Disposition of surplus and unserviceable property. (February 12.)
- No. 79. Certificates of service (Form Bi-357) to be submitted on last working day of pay period. (February 12.)
- No. 42. Data on salary and travel-expense payments for income-tax returns. (Amendment No. 1 to Admin. F. O. Memo. No. 42.) (February 13.)
- No. 80. Federal tax exemption on purchases for the exclusive use of the United States of articles included in Title IV of the Revenue Act of 1932, as amended. (February 15.)
- No. 81. General Wildlife Federation. (March 3, 1936.)
- No. 82. Submission of data on occupied office, storage, or laboratory space in Federal or other buildings. (March 9, 1936.)
- No. 83. Bureau policy respecting migratory birds. (February 29, 1936.)
- No. 84. Soil cover type maps to be treated as confidential records. (March 23, 1936.)
- No. 85. Preservation of accounts, records, correspondence files, etc. (March 26, 1936.)
- No. 86. Nation-wide survey of Federal archives. (March 26, 1936.)
- No. 56. Billing instructions on charges under bills of lading, transportation requests, and for telegrams. (Amendment No. 2 to Admin. F. O. Memo. No. 56.) (March 27.)
- No. 87. State-wide coordination meetings called by the National Emergency Council. (April 8.)
- No. 88. Renewal and preparation of informal agreements. (April 11.)
- No. 89. Procedure in renewal of leases. (April 11.)
- No. 90. Discontinuance of Form Bi-181. (April 16.)



- No. 91. Gear and Bearing Lubricants in Bulk quantities. (Superseding Admin. F. O. No. 55.) (April 24.)
- No. 92. Preparation and submission of annual efficiency ratings of all classified field employees. (April 25.)
- No. 93. Immediate survey of stocks of Standard Form 44. (May 6.)
- No. 94. Temporary regulations governing annual and sick leave under new annual and sick leave acts approved March 14, 1936. (May 9.)
- No. 95. Meter readings required for travel on mileage basis by own automobile or motorcycle. (May 9.)
- No. 96. Amendment of Standard Government Travel Regulations. (May 9.)
- No. 21. Provisions in invitations for bids as to time of delivery; liquidated damages. (Amendment No. 5 Admin. F. O. Memo. No. 21.) (May 21.) (Superseding Amendment No. 5 dated May 7, 1936.)
- No. 97. Employment of persons in more than one capacity at the same time under Department of Agriculture prohibited. (May 23.)

Bureau Property Values Exceed 17 Millions.--In response to a request from the Secretary's office, an estimate was recently made of the value of the physical property of the Bureau totaling \$17,174,861, as of March 30. The estimate included \$13,263,259 for land, \$627,905 for buildings, \$2,492,879 for other improvements, and \$790,818 for other property.

The lands held as wildlife refuges were evaluated as follows:

1,680,044 acres purchased, or being purchased, under approved agreements at an average value of \$5.79 per acre, \$9,719,208.

5,973,353 acres held under Executive order or Act of Congress at an average of \$0.59 per acre, \$3,544,051.

Total, \$13,263,259.

The buildings, including only refuge headquarters valued at \$500 or more each, were as follows: 155 buildings, at an average value of \$4,051, totaled \$627,905.

Other improvements to land included minor buildings, dams, towers, fences, telephone lines, roads, and so forth, valued at \$2,492,879.

Other property was evaluated as follows:

Office furniture and equipment, \$106,491.

Laboratory equipment, \$28,672.

Automobile, trucks, and other mechanical equipment, \$251,413.

Boats, \$220,802.

Surveyors' and other technical equipment, \$35,941.

All other property, \$147,499.

Total, 790,818.

Grand total, \$17,174,861.

#### PUBLIC RELATIONS

Addresses Lake Champlain Sportsmen.--Col. Sheldon visited Port Henry, N.Y., on May 7 when he addressed a very enthusiastic group of sportsmen and conservationists who were members of the Lake Champlain Fish and Game Association, relative to the work and policies of the Survey. Following his visit to Port Henry, he spent some time inspecting duck marshes on Lake Champlain. He reports an encouraging abundance

of nesting birds, principally black ducks and teal. Ruffed grouse appeared to have wintered well, and woodcock were found to be present in normal numbers. Col. Sheldon also visited Montpelier for a conference with Dr. R. P. Hunter of the Vermont Conservation Department.

In Boston.--On May 20 Col. Sheldon went to Boston to attend a conference of the New England Fish and Game Commissioners. The conference, however, was postponed, but Sheldon was able to call upon Mr. Bates of the Massachusetts Conservation Department as well as many others who are interested in the work of the Survey.

Honor Lisle Morrison, Retiring.--Associates of Lisle Morrison gathered in the office of the Chief on February 29 to wish him farewell on the occasion of his retirement at the age of 70 after 40 years of service in the Federal Government, the last 17 in the Biological Survey. The gathering was held in spite of Mr. Morrison's insistence that nothing be done for him; and, although he had taken steps to stop those who were planning a gift for him, a token of esteem was presented--a cyclopedia of horticulture, an imported hazel walking stick with a carved Airedale head handle, and a testimonial brochure. The brochure included the autographs of Bureau friends and photographs of the Administration Building of the Department as it was when he came and when he left the Department, and of the exhibits he had designed and supervised for the Bureau. After the gifts were presented without ceremony by Howard Zahniser, acting for a special committee, which included Wm. H. Cheesman and Mrs. Wilda Tucker, Mr. Morrison responded with words of hearty appreciation.

A familiar figure at sportsman's shows and expositions for more than ten years, Mr. Morrison during the last 14 years of his Government service developed an extensive series of wildlife-conservation exhibits of permanent value. In 1930 he was one of the Department of Agriculture's representatives at the International Fur Trade Exhibition in Leipzig, Germany, and conducted a conservation exhibit there. "Mr. Morrison's service to the Biological Survey has been of outstanding merit," said Mr. Gabrielson, in a statement for the press. "He developed the Bureau's exhibit work far beyond anything that had ever before been attained, and he has set an example that will be of lasting benefit to his successors. He has been a congenial and jolly fellow worker to all of us."

A native of Ireland, Mr. Morrison was born February 26, 1866. He came to America at the age of 19 and entered the employ of the War Department on September 16, 1895. He served in the general office of the Quartermaster's Department until his transfer to the Department of Agriculture on January 2, 1904, where he afterwards served continuously, with the exception of three years in private business with a seed-growing concern on the Pacific Coast. At one time Mr. Morrison had charge of the office of congressional seed distribution, and later was in charge of dry-land-seed distribution. He came to the Biological Survey from the Office of Farm Management, where he had been assistant to the Chief. During his early years in the Biological Survey he was assistant to the chief of the Division of Economic Investigations, the unit then in charge of predator and rodent control. Later he was in charge, not only of exhibits, but also of the Bureau's photographic work and the distribution of its publications.

Division Reorganized.--To increase the usefulness of the Division of Public Relations and to provide for a more efficient use of the personnel available, the work of the Division was reorganized, effective March 21. The Editorial and Information Section was abolished and in its place was set up an Editorial Section, so organized as to provide for increased assistance in the editing of manuscripts and to prepare the way for the expansion of editorial work that will result from the recent and future extension of the Bureau's research and management activities. The Section of Visual Information and Publication Distribution was also abolished, and the work formerly performed in that Section combined with that involving press and radio activities to form a Section of Current and Visual Information, except that the handling of requisitions for the mimeographing of administrative and other material not intended for public distribution and for job printing was assigned to the Office of the Chief of the Division. The position formerly held by Lisle Morrison is being abolished, and in lieu thereof a position of Biological Writer is being set up in the Section of Current and Visual Information.

With H. P. Sheldon, Division Chief, and William H. Cheesman, Assistant Chief, the assignment of personnel is as follows: Editorial Section--Mr. Cheesman, in charge Mrs. Louise G. Prior, Miss Ethel M. Johnson, and Miss Hester Drayton. Section of Current and Visual Information--Howard Zahniser, in charge, the new Biological writer not yet employed, Mrs. Helen C. Wood, Miss Ethel N. Jett, and Miss Gardia M. Cottle. Office of the Chief of the Division--Frank G. Grimes and Miss Martha M. Taylor.

Conservation Day Radio Programs Feature Wildlife.--The Conservation Day programs broadcast during the National Farm and Home Hour each Friday are featuring wildlife conservation this year, and the Biological Survey is contributing a series of talks on the work of the Bureau. Introduced by Mr. Gabrielson on January 10 with a talk entitled "Wildlife and Federal Government," the series has included two talks by Frederick C. Lincoln and nine by Howard Zahniser as spokesman for the Bureau. Mr. Gabrielson's review of the Wildlife Conference, including an outline of his seven-point National wildlife program on February 14 (see page 3 of this issue), was also included in this series. The talks of which mimeographed copies are available are listed on pages 16 and 17.

Morrison Supervises Philadelphia Exhibit.--Continuing his activity and interest in the Bureau's work after his retirement, Lisle Morrison, under an appointment as collaborator, supervised a Biological Survey exhibit at the Philadelphia Motor Boat and Sportsmens Show, March 9 to 14. Waterfowl, big-game, and fur-animal exhibits were included. Mr. Morrison was assisted by Eugene Corbin, of the Department's Office of Exhibits. A large attendance was reported, and such an interest shown that the sponsors have requested Bureau participation again next year.

Survey Exhibit to be Shown at Texas Centennial.--A Biological Survey exhibit on wildlife restoration has been prepared for the Texas Centennial Exposition, which will open in Dallas on June 6 and continue until November 29. Consisting of two illusion machines showing two dioramas each, the exhibit depicts waterfowl and upland game restoration. The waterfowl dioramas carry the message: "Restore the drained marshes and you provide habitat for waterfowl and fur bearers--Save the marsh you have;" while the upland-game part carries the message: "You can have your crops and wildlife too--Provide for game and you control erosion--Don't clear every strip."



The entire exhibit is summarized in raised letters centrally placed, as follows: "The U. S. Biological Survey promotes wildlife conservation because wildlife has value in dollars and cents, but best of all it makes for better and happier living." Included also in the exhibit will be two big-game heads and a mounted specimen of the roadrunner, State bird of Texas.

Special Writer Visiting CCC Camps.--Griffin Barry, special writer temporarily employed in the Section of Current and Visual Information, is on a tour of wildlife refuges being improved with the help of CCC workers. His itinerary includes the White River, Wichita, and Bear River Refuges, the group of sanctuaries near Minot, N. Dak., and the Laney Marshes refuge in Michigan. He plans to return to Washington early in June.

Official Publications, copies of which may be obtained from the Division of Public Relations, have been issued as follows:

- Report of the Chief of the Bureau of Biological Survey, 1935. By J. N. Darling. Annual Report, 51 pp. Received Dec. 12, 1935. (Supply exhausted.)
- The migration of North American birds. By F. C. Lincoln, senior biologist, in Charge Section of Distribution and Migration of Birds, Division of Wildlife Research. Circular No. 363, 72 pp. Oct. 1935. Received Jan. 9, 1936.
- Food habits of common hawks. By W. L. McAtee, principal biologist and technical adviser, Office of the Chief. Circular No. 370, 37 pp. Nov. 1935. Received Feb. 1, 1936.
- Rodents and moles as pests in bulb plantings. By Theo. H. Scheffer, associate biologist, Division of Wildlife Research, and F. E. Garlough, biologist, Division of Game Management. Circular No. 381, 16 pp. Feb. 1936. Received Feb. 27.
- Amendment of regulations 4, 18, and 19 of the regulations respecting game animals, land fur-bearing animals, game birds, nongame birds, and nests and eggs of birds in Alaska. Alaska Game Commission Circular No. 12, Supplement 1, 3 pp. Jan. 1936. Received Feb. 19.
- What shall we feed our pelters? By Charles F. Bassett, director, U. S. Fur Animal Experiment Station, Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-20, 7 pp. Nov. 1935. Received Nov. 27.
- Fur resources--the stepchild of conservation. By F. G. Ashbrook, principal biologist, in Charge, Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-25, 4 pp. Dec. 1935. Received Dec. 31.
- Directions for poisoning pinon jays. Prepared in the Section of Food Habits, Division of Wildlife Research. Mimeographed Leaflet BS-26, 2 pp. Nov. 1935. Received Dec. 3.
- A cage trap useful in the control of white-necked ravens. By S. E. Aldous, junior biologist, Section of Food Habits, Division of Wildlife Research. Mimeographed Leaflet BS-27, 5 pp. Jan. 1936. Received Jan. 18.
- Feeding schedule for rabbits. Prepared in the Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-28, 1 p. Dec. 1935. Received Jan. 2, 1936.
- Directions for preservation and care of material collected for food habits studies. Prepared in the Section of Food Habits, Division of Wildlife Research. Mimeographed Leaflet BS-29, 5 pp. Dec. 1935. Received Jan. 13, 1936.
- Economic ornithology and the correlation of laboratory and field methods. By Clarence



- Cottam, senior biologist, in Charge, Section of Food Habits, Division of Wildlife Research. Mimeographed Leaflet BS-30, 13 pp. Jan. 1936. Received Jan. 23.
- Average weight of rabbits at weaning age. By Charles E. Kellogg, biologist, Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-31, 5 pp. Jan. 1936. Received Jan. 23.
- Raising badgers in captivity. Prepared in the Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-32, 2 pp. Jan. 1936. Received 28.
- Forestry and game management. By Herman H. Chapman, Yale School of Forestry. (Reprinted from the Journal of Forestry 34 (2): 104-106, Feb. 1936.) Mimeographed Jan. Leaflet BS-33, 4 pp. Jan. 1936. Received Feb. 26.
- Raising raccoons. Prepared in the Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-34, 2 pp. Jan. 1936. Received Feb. 4.
- Raising muskrats. Prepared in the Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-35, 2 pp. Feb. 1936. Received March 5.
- Publications on fur and fur animals. Compiled in the Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-36, 2 pp. Jan. 1936. Received Feb. 1.
- The correlation of forestry and wildlife management. By Ira N. Gabrielson, Chief, (Reprinted from the Journal of Forestry 34(2): 98-103, Feb. 1936.) Mimeographed Leaflet BS-37, 8 pp. Feb. 1936. Received March 11.
- Cooperative research in wildlife management--A summary of the project to February 15, 1936. By I. T. Bode, conservationist, Division of Wildlife Research. Mimeographed Leaflet BS-38, 16 pp. Feb. 1936. Received March 11.
- Report on the Arnett, Oklahoma, experimental quail and prairie chicken management project. By Verne Davison, formerly cooperative superintendent of the project; abridged by W. L. McAtee, technical advisor, Office of the Chief. Mimeographed Leaflet BS-39, 6 pp. March 1936. Received March 24.
- An automatic drinking fountain for minks. By Charles F. Bassett, director, U. S. Fur Animal Experiment Station, Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-40, 3 pp. March 1936. Received March 25.
- Fruits attractive to birds-- Northwestern States (Region No. 1). By W. L. McAtee, principal biologist and technical adviser, Office of the Chief. Mimeographed Leaflet BS-41, 14 pp. April 1936. Received May 12.
- Fruits attractive to birds--Rocky Mountain States (Region No. 2). By W. L. McAtee, principal biologist and technical adviser, Office of the Chief. Mimeographed Leaflet BS-42, 12 pp. April 1936. Received May 28.
- Fruits attractive to birds--Northern Plains States (Region No. 3). By W. L. McAtee, principal biologist and technical adviser, Office of the Chief. Mimeographed Leaflet BS-43, 13 pp. April 1936. Received May 22.
- Fruits attractive to birds--Northeastern States (Region No. 4). By W. L. McAtee, principal biologist and technical adviser, Office of the Chief. Mimeographed Leaflet BS-44, 26 pp. April 1936. Received May 18.
- Fruits attractive to birds--California (Region No. 5). By W. L. McAtee, principal biologist and technical adviser, Office of the Chief. Mimeographed Leaflet BS-45, 14 pp. April 1936. Received May 16.
- Fruits attractive to birds--Great Basin States (Region No. 6). By W. L. McAtee, principal biologist and technical adviser, Office of the Chief. Mimeographed Leaflet BS-46, 9 pp. April 1936. Received May 16.

- Fruits attractive to birds--Southwestern States (Region No. 7). By W. L. McAtee, principal biologist and technical adviser, Office of the Chief. Mimeographed Leaflet BS-47, 10 pp. April 1936. Received May 16.
- Fruits attractive to birds--Southern Plains States (Region No. 8). By W. L. McAtee, principal biologist and technical adviser, Office of the Chief. Mimeographed Leaflet BS-48, 12 pp. April 1936. Received May 22.
- Fruits attractive to birds--Southeastern States (Region No. 9). By W. L. McAtee, principal biologist and technical adviser, Office of the Chief. Mimeographed Leaflet BS-49, 12 pp. April 1936. Received May 22.
- Fruits attractive to birds--Florida (Region No. 10). By W. L. McAtee, principal biologist and technical adviser, Office of the Chief. Mimeographed Leaflet BS-50, 13 pp. April 1936. Received May 25.
- Local control of magpies. By E. R. Kalmbach, senior biologist, Section of Food Habits, Division of Wildlife Research. Mimeographed Leaflet BS-51, 8 pp. April 1936. Received May 7.
- Raising guinea pigs. Prepared in the Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-52, 2 pp. April 1936. Received May 1.
- Birdbanding. Prepared in the Section of Distribution and Migration of Birds, Division of Wildlife Research. Mimeographed Leaflet BS-53, 5 pp. April 1936. Received May 7.
- Rodent control aided by emergency conservation work. By S. P. Young, Chief, Division of Game Management. Mimeographed Leaflet BS-54, 5 pp. April 1936. Received May 9.
- Pertinent facts on the angora wool rabbit. Prepared in the Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-55, 1 p. May 1936. Received May 22.
- Periodicals on rabbits and cavyes. Prepared in the Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-56, 1 p. May 1936. Received May 22.

Outside Publications.--Articles by members of the Survey appearing in outside publications have been reported as follows:

- Aldous, C. M. Food habits of Lepus americanus phaeonotus. Jour. Mammal. 17: 175-176, May 1936.
- Ashbrook, F. G. Fur farming in perspective. Natl. Fur News, pp. 8, 20. Dec. 1935.
- Quality not quantity must guide farmer. Amer. Raw Fur Reporter 1 (6): 4. Dec. 21, 1935.
- Fur trade should attend wildlife conference. Fur Trade Rev. 8 (46): 1, 5, illus. Jan. 30, 1936.
- Bell, W. B. When the ducks fly south. Sci. Mo. 42: 80-83. Jan. 1936.
- Carr, Carlyle. Cotton rat control in Florida. Agr. Ext. Serv., Univ. Fla., Circular 41, 8 pp. illus. March 1936.
- Cheesman, Wm. H. Bureau of Biological Survey. Americana Annual for 1936: 88-89.
- Cottam, Clarence. Early migration of the great black-backed gull. Auk 53: 81. Jan. 1936.
- Food of the limpkin (Aramus pictus pictus). Wilson Bull. 48: 11-13. March 1936.
- Food of Arctic birds and mammals collected by the Bartlett Expeditions of

- 1931, 1932, and 1933. Jour. Wash. Acad. Sci. 26: 165-177. Apr. 15, 1936.
- \_\_\_\_\_ and Uhler, F. M. The role of fish-eating birds. Prog. Fish Cult., Memorandum 1-131, No. 14, pp. 1-14. Jan. 1936. (Mimeographed).
- Gabrielson, Ira N. The correlation of forestry and wildlife management. Jour. Forestry 34: 98-103. Feb. 1936.
- \_\_\_\_\_ It's up to you! Field and Stream 40 (11): 17. March 1936.
- \_\_\_\_\_ A national program for wildlife restoration. Amer. Forests 42: 104-105, 126, 145, illus. March 1936.
- \_\_\_\_\_ Cottam, Clarence; Nelson, A. L.; and Kalmbach, E. R. Christmas bird census. Bird-Lore 38: 57-58. Jan./Feb. 1936.
- Goldman, E. A. Preservation of wildlife in the United States. World Today 3(2): 35-38, illus. Dec. 1935.
- \_\_\_\_\_ A new otter from Kamchatka. Jour. Mammal. 17 (2): 164. May 1936.
- Greene, E. R. Arkansas kingbird (Tyrannus verticalis) at Lake Mattamuskeet, N. C. Auk. 53: 83. Jan. 1936.
- \_\_\_\_\_ American rough-legged hawk (Buteo lagopus sancti-johannis) in North Carolina. Auk 53: 209. Apr. 1936.
- Jewett, S. G. The Farallon cormorant near Vancouver, Washington, Murrelet 16: 70. Sept. 1935.
- \_\_\_\_\_ The black brant at Tule Lake, California. Murrelet 17: 19. Jan. 1936.
- Kellogg, C. E. Price and classification trends of silver fox skins. Canad. Silver Fox and Fur 2 (4): 5-8, illus. Apr. 1936. (Appeared also in: Fur Farming 11 (10): 13-17, illus., May 1936; Fur Record 15 (87): 39-42, illus., May 1936; Natl. Fur News, May 1936, pp. 4-7, illus.; and Amer. Fur Breeder, May 1936, pp. 6, 8-10, illus.)
- Kelso, Leon (with Estelle H. Kelso). The relation of feathering of feet of American owls to humidity of environment and to life zones. Auk 53: 51-56. Jan. 1936.
- \_\_\_\_\_ (with Estelle H. Kelso). A new ciccaba from southeastern Mexico and northern Guatemala. Auk 53: 215-216. Apr. 1936.
- Knappen, Phoebe. Another three-legged bird. Auk 52: 470. Oct. 1935.
- \_\_\_\_\_ (with W. H. Ball and Robert Wallace). Christmas bird census, Fort Washington to Marshall Hall, Md. Bird-Lore 38: 57. Jan./Feb. 1936.
- Lincoln, F. C. Recovery of banded birds of prey. Bird Banding 7: 38-45. Jan. 1936.
- \_\_\_\_\_ The future of bird banding. Bird banding 7: 81-82. Apr. 1936.
- McAtee, W. L. A soil conservation bird bulletin. [Helping our bird friends, compiled by Ross O. Stevens, High Point, N. C. 15 pp., illus. Sept. 1935.] (Review). Auk 53: 113. Jan. 1936.
- \_\_\_\_\_ Manuel on bird-killing in the Philippines. [Three bird contrivances that are indirectly harmful to the Filipino farmers, by Canuto G. Manuel, Philippine Jour. Sci. 6: 327-341. 1935.] (Review). Auk 53: 115-116. Jan. 1936.
- \_\_\_\_\_ Collinge on food of the coot. [Food and feeding habits of the coot (Fulica atra Linn.), Ibis, Jan. 1936, pp. 35-39.] (Review). Auk 53: 241-242. Apr. 1936.
- \_\_\_\_\_ The Malthusian principle in nature. Sci. Mo. May 1936. pp. 444-456.
- \_\_\_\_\_ Letter to the editor. [On the volumetric system of stomach analysis in food habits studies.] Jour. Mammal. 17: 193-194. May 1936.
- McKenney, F. D., and Shillinger, J. E. Infectious myxomatosis of domestic rabbits. Jour. Amer. Vet. Med. Assoc. 40: 621-630, illus. Dec. 1935.
- Neff, J. A. Procedure and methods in controlling birds injurious to crops in California: General procedure. 12 pp. California Department of Agriculture. (Mimeographed). Nov. 1935.



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- Oberholser, H. C. The season (ornithological ): Washington (D. C.) region. Bird-Lore 37: 466-467. Nov. /Dec. 1935.
- Ornithological problems and opportunities in Georgia. Oriole 1 (1): 7-8. March 1936.
- Oderkirk, G. C. House mice: their prevention and control. Purdue Univ. Agr. Ext. Dept., Ext. Bull. 211. 8 pp., illus. Apr. 1936.
- Scheffer, T. H. Introduced food plants for waterfowl. Murrelet 16: 66-69. Sept. 1935.
- Sheldon, H. P. Guns and game: Fitness to handle firearms; cartridges for deer shooting; new rifles; old methods; \$30,000 for a hole. Sportsman 18 (6) 60-61. Dec. 1935.
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- Guns and game: The over-and-under gun; Camp Perry appropriation; a new lubricating device. Sportsman 19 (2): 52-53. Feb. 1936.
- Guns and game: The wildlife conference; the 1936 duck stamp; the .348 Winchester; new Remington rifles. Sportsman 19 (3): 62-64. March 1936.
- Guns and game; Spring fever; shooting instructions for the young; Colonel Lewis S. Thompson. Sportsman 19 (5): 69-70, 72. May 1936.
- Taylor, W. P. Significance of the biotic community in ecological studies--a review. Quart. Rev. Biology 10: 291-307. Sept. 1935.
- Notes on Crotalus atrox near Tucson, Arizona, with special reference to its copulation. Copeia, No. 3, pp. 154-155. Oct. 15, 1935.
- Man and nature, a contemporary view. Sci. Mo. 41: 350-362. Oct. 1935.
- The banner-tail and other burrowers. Amer. Forests 42: 68-70, 93, illus. Feb. 1936.
- Young, S. P. Our Federal cooperative predator control work. Southern Agriculturist 65 (12): 34, illus. Dec. 1935.
- Zahniser, Howard. January. Nature Mag. 27: 7. Jan. 1936.
- February. Nature Mag. 27: 71. Feb. 1936.
- In the month of March. Nature Mag. 27: 135. March 1936.
- April. Nature Mag. 27: 199. Apr. 1936.
- The month of May. Nature Mag. 27: 263. May 1936.
- In June, Olive Thorne Miller. Nature Mag. 27: 327. June 1936.

Press and Radio Information and Addresses, copies of which (chiefly in mimeograph) may be obtained from the Division of Public Relations, have been issued as follows:

- Wildlife bureau reports growing public interest. Press statement 1106-36. Released December 23.
- Program is announced for Wildlife Conference. Press statement 1286-36. Released January 17.
- Pelt crop on silver fox farms 28 times larger than in 1923. Press statement 1302-36. Released February 2.
- Duck inventory under way with hundreds making counts. Press statement 1311-36. Released January 25.



Lisle Morrison retires from Biological Survey. Press statement 1485-36. Released March 1.

Game-law violators jailed and fined. Press statement 1572-36. Released March 18.

Gabrielson asks breathing spell for four dwindling fur animals. Press statement 1617-36. Released March 27.

Nearly 6,000,000 hunters paid \$9,000,000 for licenses in 1934. Press statement 1632-36. Released April 1.

Bull Island, once pirate haunt, made bird refuge. Press statement 1672-36. Released April 4.

More wildlife object of plan adopted by 9 States and U. S. Press statement 1672-36. Released April 9.

(5,600 CCC boys working in refuges) (Prepared for ECW release) Press statement. Released April 19.

CCC boys help solve duck problem on Arkansas area. Press statement 1793-36. Released May 16.

Crow bounty depends on where he loses his head. Clip Sheet No. 913. Released December 29.

Would "marsh rabbit" be same by any other name? Clip Sheet No. 914. Released January 5.

Wild ducks appreciate schoolmarm hospitality. Clip Sheet No. 916. Released January 19.

Game refuges opened to bow and arrow hunters. Clip Sheet No. 916. Released January 19.

Weeds in the water cut down duck food. Clip Sheet No. 920. Released February 16.

Fur-farming investments estimated at \$50,000,000. Clip Sheet No. 920. Released February 16.

Muskrat marshes pay better than drainage. Clip Sheet No. 922. Released March 1.

CCC boys get credit for duck-refuge work. Clip Sheet No. 923. Released March 8.

When ducks trespass. Clip Sheet No. 924. Released March 15.

Ponds behind check dams bring ice and wild ducks. Clip Sheet No. 925. Released March 22.

Alien birds and animals. Clip Sheet No. 927. Released April 5.

Pintail's age record broken by fish hawk. Clip Sheet No. 929. Released April 19.

More than 15,000 juncos banded in U. S. in a year. Clip Sheet No. 928. Released April 12.

Ducks in alligator grass does not mean they eat it. Clip Sheep No. 931. Released May 3.

Seek facts on annual catch of fur animals. Clip shert No. 931. Released May 3.

Bats not so bad, but roosts cause complaint. Clip Sheet No. 934. Released May 24.

Wildlife's ups and downs. Radic release 4962. Farm Flashes, December 19.

Reindeer and caribou. Radio release. Farm Flashes, December 24.

Bird flight secrets. Radio release 5030. Farm Flashes, January 7.

Border game refuge. Radio release 5042. Farm Flashes, January 9.

Plant for wildlife. Radio release. Farm Flashes, January 13.

Owl travel records. Radio release 5102. Farm Flashes, January 22.

Check-up on hawks. Radio release 5105. Farm Flashes, January 23.

Waterfowl check-up. Radio release 5108. Farm Flashes, January 24.

Wildlife meeting. Radio release. Farm Flashes, January 28.

Timber-game crops. Radio release 5128. Farm Flashes, January 28.

Buzzard traced far. Radic release. Farm Flashes, January 31.

Tracing bird flight. Radio release. Farm Flashes, February 1.  
Tree belt planting. Radio release 5149. Farm Flashes, February 4.  
Will fur sheep pay? Radio release 5152. Farm Flashes, February 5.  
Birds always on go. Radio release. Farm Flashes, February 7.  
Game refuge pointers. Radio release. Farm Flashes, February 7.  
Fur supply dwindles. Radio release. Farm Flashes, February 19.  
Bird flyways differ. Radio release. Farm Flashes, February 19.  
Clean out rats now. Radio release. Farm Flashes, February 20.  
Rabbit buying hint. Radio release 5213. Farm Flashes, February 21.  
Game takes to cover. Radio release. Farm Flashes, February 27.  
Plans for wildlife. Radio release. Farm Flashes, February 28.  
Big game still here. Radio release. Farm Flashes, March 14.  
Game chances better. Radio release. Farm Flashes, March 18.  
Ruffed grouse study. Radio release. Farm Flashes, March 19.  
New wildlife plans. Radio release. Farm Flashes, March 24.  
Boy plants for game. Radio release 5338. Farm Flashes, March 27.  
Marsh for muskrats. Radio release 5339. Farm Flashes, March 28.  
Shore birds on wing. Radio release 5362. Farm Flashes, April 4.  
Mole and mouse control. Radio release 5360. Farm Flashes, April 4.  
Silver fox outlook. Radio release 5397. Farm Flashes, April 14.  
Fur bearer holiday. Radio release. Farm Flashes, April 16.  
Hunters on increase. Radio release. Farm Flashes, April 18.  
Save cover for game. Radio release. Farm Flashes, April 24.  
Not-so-black crows. Radio release. Farm Flashes, April 25.  
Better duck flyways. Radio release. Farm Flashes, April 30.  
Warning on wildlife. Radio release. Farm Flashes, May 7.  
Game refuge set-up. Radio release. Farm Flashes, May 9.  
Bird scouts wanted. Radio release 5482. Farm Flashes, May 16.  
Relations of agriculture and game management. Address by Ira N. Gabrielson, Chief, delivered at the annual meeting of the Association of Land Grant Colleges and Universities, Washington, D. C., November 19.  
A national program for wildlife conservation. Revised transcript of an address by Ira N. Gabrielson, Chief, delivered at the North American Wildlife Conference, Washington, D. C., February 7.  
American bird conservation by treaty. Radio talk commemorating the Migratory Bird Treaty by H. M. Worcester, U. S. Game Management Agent for California and Nevada. Western Farm and Home Hour, December 9.  
Holidays for the waterfowl. Radio talk by W. C. Henderson, Associate Chief. Conservation Day Program, National Farm and Home Hour, December 20.  
Land planning in relation to migratory and upland game birds. Radio talk by W. M. Rush, Regional Director, Pacific Region. Western Farm and Home Hour, January 2.  
Wildlife and the Federal Government. Radio talk by Ira N. Gabrielson, Chief. Conservation Day Program, National Farm and Home Hour. January 10.  
Making biological surveys. Radio talk by Howard Zahniser, Assistant, Division of Public Relations. Conservation Day Program, National Farm and Home Hour, January 17.  
A conference for wildlife restoration. Radio talk by Ira N. Gabrielson, Chief. Conservation Day Program, National Farm and Home Hour, January 24.  
Judging the usefulness of birds. Radio talk by Howard Zahniser, Assistant, Division of Public Relations. Conservation Day Program, National Farm and Home Hour, January 31.

- A national wildlife program. Radio talk by Ira N. Gabrielson, Chief. Conservation Day Program, National Farm and Home Hour, February 14.
- Bird migrations. Radio talk prepared by W. M. Rush, Regional Director, and delivered by Hugh Worcester, Game Management Agent for California. Western Farm and Home Hour, February 17.
- The Biological Survey waterfowl inventory. Radio talk by Frederick C. Lincoln, in Charge, Section of Distribution and Migration of Birds. Conservation Day Program, National Farm and Home Hour, February 21.
- Naming the animals. Radio talk by Howard Zahniser, Assistant, Division of Public Relations. Conservation Day Program, National Farm and Home Hour, February 28.
- Conserving the caribou, our American reindeer. Radio talk by Howard Zahniser, Assistant, Division of Public Relations. Conservation Day Program, National Farm and Home Hour, March 6.
- Status of big game in the West. Radio talk by W. M. Rush, Regional Director. Western Farm and Home Hour, March 9.
- Saving the nation's elk. Radio talk by Howard Zahniser, Assistant, Division of Public Relations. Conservation Day Program, National Farm and Home Hour, March 13.
- Conserving our upland game. Radio talk by Howard Zahniser, in Charge, Section of Current and Visual Information, Conservation Day Program, National Farm and Home Hour, March 27.
- Protecting our song and insectivorous birds. Radio talk by Howard Zahniser, in Charge, Section of Current and Visual Information. Conservation Day Program, National Farm and Home Hour, April 24.
- More about the birds. Radio talk by Howard Zahniser, in Charge, Section of Current and Visual Information. Conservation Day Program, National Farm and Home Hour, May 1.
- The study of bird migration. Radio talk by Frederick C. Lincoln, in Charge, Section of Distribution and Migration of Birds. Conservation Day Program, National Farm and Home Hour, May 8.
- Disease in the wild. Radio talk by Howard Zahniser, in Charge, Section of Current and Visual Information. Conservation Day Program, National Farm and Home Hour, May 29.

#### WILDLIFE RESEARCH

Nine States Cooperating in Research, Demonstration Projects.--Nine States are now cooperating with the Bureau in investigations to learn how to increase, maintain, and use wildlife resources, and to show on trial areas how facts found in research can be applied in a practical manner. The cooperating States are Ohio, Alabama, Connecticut, Iowa, Maine, Oregon, Texas, Utah, and Virginia. Several other States sought to take part in the research program, but available funds limited the quota to nine. These were selected with a view to carrying on research on a regional basis with as little duplication as practicable. Each State program is arranged so that the practical information obtained may be applied in a large area. Advisory committees of representatives of the Survey, land grant colleges, and State game departments administer the work and funds. Project leaders selected by the Bureau and States direct the active work at the land grant colleges.

Major studies under way thus far at the college stations and project leaders are: Mourning dove, Alabama Polytechnic Institute, Auburn, Ala., H. S. Peters; eastern cottontail rabbit, Connecticut Agricultural College, Storrs, Conn., Dr. Paul D. Dalke; muskrat, midwestern cottontail rabbit, and coot, Iowa State College, Ames, Iowa, Logan J. Bennett; woodcock and moose, University of Maine, Orono, Maine, C. M. Aldous; raccoon, gray squirrel, and fox squirrel, Ohio State University, Columbus, Ohio, Lawrence E. Hicks; antelope and possibly blue grouse, Oregon Agricultural College, Corvallis, Oreg., Arthur S. Einarsen; western bobwhite quail and western turkey, Texas



A. & M. College, College Station, Tex., Dr. W. P. Taylor; mule deer and sage grouse, Utah State Agricultural College, Logan, Utah, Dr. D. I. Rasmussen; and wild turkey, Virginia Polytechnic Institute, Blacksburg, Va., C. O. Handley.

One or more trial demonstration areas are being set up at each station in order to work out a complete life history and management practice for one or more fur, game, or other wildlife species. Most of these areas will be established on land of private owners cooperating with the research projects and in State and national forests. Summaries of the State programs are included in mimeographed leaflet, BS-38. Funds to maintain the research stations come from the Biological Survey, the American Wildlife Institute, the colleges, and the game departments of States in which the stations are located.

Studies Mosquito Control's Effect on Wildlife.---Dr. Warren S. Bourn, assistant aquatic biologist, returned on May 25 from a ten-day inspection trip in Pennsylvania, New Jersey, Delaware, and Maryland studying the effects of mosquito-control operations on wildlife. During part of the trip he was accompanied by Clarence Cottam.

In Pennsylvania Dr. Bourn inspected in Delaware County the diked marsh area between Norwood and Philadelphia, which the local mosquito control commission proposes to spray with a fuel-oil-pyrethrum mixture once a month by airplane. Though this procedure may adversely affect a considerable number of nesting birds, it is apparently the only one that can be successfully employed there, and the section is densely populated. Those in charge of the work agreed, however, to cooperate with the local game protector, to guard against spraying over known nesting sites, and to spray only those sections of the marshes that actually contain mosquito-breeding places.

In New Jersey Dr. Bourn observed the spraying experiments on the forest sections of the national historical park at Morristown to determine an effective method of controlling the inch worm and other forest insects. The experiments consisted of spraying and dusting with lead arsenate by autogyro. No definite conclusions can be reached as yet as to the effect on bird life. In New Jersey Dr. Bourn and Mr. Cottam also met the State entomologist and the superintendent of State game management and initiated cooperative experiments on the State game preserve at Mannahawkin to determine the effects of ditching on the ecology of salt marsh ponds.

In Delaware Dr. Bourn and Mr. Cottam checked the experimental work being carried out in Kent County to determine the effects of various methods of mosquito control on marsh ecology. In this State much burning destructive to wildlife was observed in the marshes. In Maryland they investigated the possibility of experimental control work on a section of the marshes of the Blackwater Refuge, concluding that such work would be impracticable and inadvisable because of the peculiar type of marsh involved. They also spent considerable time with Maryland mosquito control authorities, going over with them cooperative experiments to determine suitable methods for the restoration of muskrat marshes in connection with effective means of controlling pest mosquitoes. These experiments show promise of important results and useful information, he reports.

Represents Survey on International Boundary Refuge Commission.---Dr. Bell left Washington on February 14 for Alpine, Tex., having been appointed as a member of the Commission of the United States to conduct investigations on the United States-Mexican



boundary for the purpose of formulating policies and plans for the development of international parks, forest reserves, and wildlife refuges. The investigation ended suddenly on February 25 with an automobile accident causing the tragic death of two members of the party--George M. Wright, of the Wildlife Division of the National Park Service, and Roger Toll, Superintendent of the Yellowstone National Park. Before returning to Washington Dr. Bell inspected work in progress and conferred with local leaders in Texas, Oklahoma, and Missouri. More recently he visited Rhode Island in the interest of the Wildlife Federation and was a member of the party from the Department to study operations of the Tennessee Valley Authority in Tennessee and Alabama.

Attends Cooperators Field School.--On January 25, Dr. Bell in company with Messrs. Cottam, Kalmbach, and Bode left for Thomasville, Ga., to attend the field school and conference of Survey game management representatives connected with various institutions and with forest wildlife work. The work of this group was conducted in the Thomasville (Ga.) - Tallahassee (Fla.) area where the study of upland game management was under the supervision of Herbert L. Stoddard. Other field men in attendance were Dr. Walter P. Taylor, Dr. D. I. Rasmussen, Harold S. Peters, Charles O. Handley, Dr. Paul D. Dalke, Clarence M. Aldous, Logan J. Bennett, E. E. Horn, T. D. Burleigh, A. S. Einarsen, J. Paul Miller, and Harold L. Blakey. During this trip Messrs. Cottam and Kalmbach spent one day at Waukulla Springs and St. Marks Refuge studying waterfowl and waterfowl foods. At the conclusion of the conferences and field work at Thomasville, the entire party of field men and Washington employees came to Washington for further conferences regarding the research work carried on at their respective field stations. These men also attended the North American Wildlife Conference while in Washington.

Survey's Authority on Mexican Fauna Appreciated.--Calling E. A. Goldman an authority on Mexican fauna who is most familiar with this subject, the American Embassy at Mexico City recently suggested to the Secretary of State "that the Department of Agriculture be informed of the Embassy's appreciation of the help rendered by Major Goldman throughout the negotiations" for the Convention for the Preservation of Migratory Birds and Game Mammals. Major Goldman's interest and cooperation were particularly useful in connection with technical matters, said R. Henry Norweb, Charge d'Affaires ad interim.

Employee Honored.--The January (1936) issue of Hoofs and Horns--Including Arizona Wild Life was "dedicated to Walter Penn Taylor in recognition of his outstanding work" in the Arizona Game Protective Association.

To Make Survey of Aleutian Islands.--Cecil S. Williams left Washington, D. C., on April 15 on a projected trip to include reconnaissance surveys of wildlife conditions on the major islands in the Aleutian Chain. The survey party, headed by Olaus J. Murie, embarked from Seattle, Wash., on the Bureau's patrol boat, Brown Bear, and proceeded first to Juneau, where conferences were scheduled with the Alaska game officials. The survey is expected to continue through August.

Survey Wildlife Conditions on Ocala Forest.--Dr. H. H. T. Jackson and A. L. Nelson spent the period March 9 to April 4 making a wildlife survey of Ocala National

Forest near Ocala, Fla. They report that the game refuge in the forest now maintains a good population of deer and that raccoons are common in the dry pine scrub. A few turkeys are still present, and the Florida panther and Florida black bear also occur in small numbers.

Study Refuge Prospects in Florida.--A. C. Martin and A. H. Howell returned to Washington March 27 after one and a half months spent in Florida on a reconnaissance of prospective refuge sites. This brief survey of the State resulted in the locating of several areas having possibilities for refuge development. Mr. Howell had been in Florida in December, partly on vacation and partly on official work making observations on birds and mammals in Florida. He examined collections of birds in Georgia en route home in connection with his studies of the Georgia avifauna.

#### Mammal Research

Visits National Forest.--Dr. H. H. T. Jackson on invitation from the Forest Service was present at two of the "game drives" on the Allegheny National Forest, Pa., on December 19 and 20. The first day of his inspection, the drive covered an area of 298 acres near the southwestern corner of the forest, where 19 deer were counted. Nine deer were seen by the drivers on the second day in an area of 184 acres near the northeast-central part of the forest. Other species of game animals were counted on each drive.

Scientist in Mexico.--E. A. Goldman, after completing his conferences with Government officials in Mexico City in regard to the migratory bird treaty between the United States and Mexico, made a survey of waterfowl conditions in various parts of Mexico. At the conclusion of his waterfowl studies, he embarked with F. Carrington Weems on a collecting trip into the mountains of southern Baja California for specimens of mountain sheep from that region. The expedition was made possible through the generosity of Mr. Weems, who has for several years been cooperating in the mammal studies of the Bureau. He returned to Washington on May 23.

Unusual Red Wolf Specimen.--On February 11 the mammal laboratories received a red wolf specimen taken by E. G. Pope, of the Division of Game Management, near Mineral Wells in Palo Pinto County, Tex. This animal was unusual in that the middle toe pads were grown together. Mr. Pope reports relative to this wolf and others as follows: "Out of a pack of six wolves that I caught . . . two were extremely large, as big as a lobo, with very peculiarly large round feet. The entire pack had their middle toe pads on all four feet grown together at the base."

Lectures on Birds.--A. H. Howell, on January 23, gave a lecture, with slides, before a group of Girl Scouts at the Langley (Va.) Junior High School. His subject was "Bird Life of the District of Columbia". On May 11 and 12 Mr. Howell visited the American Museum of Natural History in New York and the Academy of Natural Sciences at Philadelphia to study red squirrels. He obtained much information regarding their distribution and borrowed some specimens for special study.

Food Habits Research

Inspects Mosquito Control Projects.--Clarence Cottam left Washington on May 19 for Cambridge, Md., where he met Dr. W. S. Bourn for an inspection trip of mosquito control activities, reported more fully on page 18 of this issue of THE SURVEY. On May 25 and 26 Mr. Cottam inspected wildlife conditions on Long Island. He returned to Washington on May 27.

Studies Waterfowl Food Conditions on Potomac.--Studies made by F. M. Uhler on waterfowl feeding grounds in the lower Potomac during the past winter and spring months indicate a decided increase in the quantity of fresh-water food plants for wild ducks (particularly wild celery and redhead grass). The increase is attributed to the tremendous volume of fresh flood water that forced most of the brackish water out of the tidal Potomac. On May 10 the water in Chesapeake Bay at the mouth of the Potomac contained less than two-thirds its normal salt content for that date, and a month earlier only about half the normal salinity prevailed.

To Observe Effects of Arsenical Spraying.--Franklin H. May left Washington on May 12 for Morristown, N. J., to observe the effects on small bird life of arsenical sprays being used experimentally by the National Park Service at the Morristown National Historical Park. The findings will be awaited with interest, since the effect of insect sprays on birds has been a subject of considerable debate.

Inspect CCC Activities on National Forest.--From April 8 to April 11, Leo K. Couch and A. L. Nelson inspected wildlife conditions on the George Washington National Forest. Progress of activities at the Big Levels Game Refuge were noted, and a brief survey was also undertaken of the proposed North River refuge.

Pacific Eelgrass Transplanted along Atlantic.--Between April 3 and April 9, Neil Hotchkiss, assisted by various members of the Divisions of Migratory Waterfowl and Game Management, set plants of eelgrass, collected by Theo. H. Scheffer in the Puget Sound Region, at twelve different sites between New Jersey and South Carolina. Results of its establishment are awaited with interest. In addition to this work a transplantation was made of the salt-water relative of eelgrass, Haleodule wrightii, from New River, N. C., to the Cape Romain Refuge, S. C. Healthy and abundant growths of native eelgrass were observed in Virginia and North Carolina.

Study Food of Ruffed Grouse Chicks.--Some 67 stomachs of ruffed grouse chicks from one day to several weeks old have recently been examined for the New York State Conservation Department. The food of this favorite eastern game bird has long been the object of study in laboratory and field. Yet, information has hitherto been lacking on its food requirements during one of the periods of greatest mortality, the early growth, or chick stage.

Inspect Food Habits Laboratory.--On February 8 a party of wildlife technicians from the Soil Conservation Service inspected the food habits laboratory to obtain first-hand information on methods of collecting data and the techniques involved in evaluating the relative importance of wildlife foods. On February 9 the cooperative research workers of the Bureau made a similar inspection.



Spiders as Food for Birds.--The information in the food habits files regarding bird predation on spiders has recently been summarized for use in a book on the biology of spiders being written by Dr. W. S. Bristowe, of London, England.

Makes Germination Tests.--Germination experiments on the seeds of a number of species of duck-food plants, which have been in progress for the past six months under the direction of F. M. Uhler, are now nearly completed, and the data are being prepared for use in making recommendations for the improvement of waterfowl feeding grounds. The food habits laboratory has also recently been cooperating with the New York State College of Agriculture in testing the viability of stored seeds of aquatic plants after shipment without refrigeration.

Makes Wildfowl Observation from Blimp.--On January 24, Johnson A. Neff, with the cooperative assistance of the U. S. Army Air Base at Sunnyvale, Calif., made a flight over waterfowl concentration areas in the Sacramento Valley. Mr. Neff considers this the best way to make an accurate and detailed census, since an extensive land and water area can be more easily and effectively covered by air observation.

Outline Bird Control in California.--A mimeographed bulletin entitled "Procedure and Methods in Controlling Birds Injurious to Crops in California," by Johnson A. Neff and S. E. Piper, has recently been published by the California State Department of Agriculture.

Investigates Lead Poisoning.--C. C. Sperry spent one day during January investigating a report of duck sickness at Fort Collins, Colo., where he found about 100 birds dead or dying from lead poisoning. The birds had picked up lead pellets in lethal quantity in concentrated shooting areas.

Added to Washington Personnel.--Clarence F. Smith was appointed for temporary service on January 28 to aid in routine work of the Section of Food Habits and in preparing publications.

Returns to Denver Office.--E. R. Kalmbach after spending a few months in Washington left for Denver on February 13. En route he planned to visit S. E. Aldous, who is engaged in crow-control experiments in Oklahoma. Mr. Aldous has devoted considerable time to determining the efficacy of a slow-acting poison as well as of crow traps of the Australian type. The latter have proved effective in the control of the white-necked raven in Texas and at present appear to be the logical means for the local control of this species.

Attends Mosquito Control Conference.--Johnson A. Neff with E. E. Horn attended the annual conference of mosquito abatement officials of California on December 10. At their Berkeley meeting Mr. Neff presented a paper on "Impressions of Mosquito Control versus Wildlife".

Makes Experimental Plantings.--Theo. H. Scheffer made experimental plantings of banana waterlily and other waterfowl food plants in parts of Washington and Oregon in December. He also made a survey there of waterfowl food conditions and waterfowl abundance.

Observes Waterfowl Conditions.--Neil Hotchkiss made observations on waterfowl abundance and food conditions in States along the Gulf Coast and in the Mississippi Valley in December and January. He also inspected proposed waterfowl refuge areas.

#### Distribution and Migration of Birds

Assigned to Waterfowl Investigations in Canada.--Continuing the summer investigations in Canada instituted several years ago to determine as accurately as possible the status of migratory waterfowl, particularly the relative abundance of the different species, conditions affecting them on their breeding grounds, prospects for the season's crop, and other pertinent information, five parties will be operating in Canada during the next few months--in British Columbia, Biologist Luther J. Goldman and Game Management Agent Clifford L. Fretwell; in Alberta and southern Saskatchewan, Deputy Agent Robert Bach, who will be joined after July 1 by Game Management Agent Webster H. Ransom; in northern Canada (Mackenzie and Yukon), Biologist Charles E. Gillham; in Manitoba and eastern Saskatchewan, Deputy Game Management Agents Edward T. Carter and Milton Boone; in the Maritime Provinces of Nova Scotia and New Brunswick (possibly in Quebec), Game Management Agent John C. S. Boswell and Deputy Agent Earnest R. Atkinson. Mr. Gillham will follow the plan of the last few years in making investigations in the region of the Athabaska Delta and will continue on through Great Slave Lake to the mouth of the Mackenzie River, remaining there until the freeze-up in the latter part of August, returning probably by air via Yukon, Whitehorse, and Skagway.

Take Duck Inventory.--The second annual inventory of migratory waterfowl that spend the winter in the United States was made January 24, 25, and 26. Eight regional directors of the Division of Game Management assigned estimators to survey definite areas by ground, water, and air. In addition to the regular field personnel of the Survey observers were augmented by State game wardens, personnel from the Forest Service, the Soil Conservation Service, the Bureau of Public Roads, State police officers, observers from certain State colleges, and volunteer observers from the regular rolls of the Survey, and from the membership of the National Association of Audubon Societies. The Navy Department, the Coast Guard, and the Connecticut National Guard furnished land planes or seaplanes, and a few interested civilians contributed the use of aircraft, so that all coastal areas were surveyed from the air as well as from the land or water. The War Department furnished a blimp, the "TC-13", stationed at Moffet Field, Calif., and the blimp "Enterprise," was made available to the Potomac River from Washington to Point Lookout. In short, the waterfowl inventory this year was an excellent example of cooperation by Federal, State, and private agencies.

Duck Survey of Potomac River.--On March 3 the blimp "Enterprise" was placed at the disposal of the Bureau, Commander Karl L. Lange, Verner L. Smith, W. E. Crouch, of the Division of Game Management, Frederick C. Othman of the United Press, and F. C. Lincoln, making a trip down the Potomac to a point opposite Pope's Creek, Md. The cruising speed was about 35 miles an hour, which was found excellent for waterfowl observations. Ducks were not at all common, the total number being about 4,000, led by black ducks, closely seconded by canvasbacks, with smaller numbers of lesser scaups, redheads, and mallards. Three whistling swans were noted, and several bald eagles.

Addresses Eastern Bird Banders.--On May 20 Mr. Lincoln attended the meeting of the Eastern Bird Banding Association in Philadelphia, speaking on the work of other regional associations and their place in the general scheme of operation throughout the country.

New Series of Bird Migration Memoranda Started.--On April 1 Bird Migration Memorandum No. 1 was issued, addressed to the observers who have for many years reported to the Survey the migrations of birds noted in their localities. In initiating this new series of informational bulletins, the intent is to present a tabulation of the original data received from the observers, listing only the earliest arrivals in the different States. It is hoped that it will be possible to prepare summaries for both the spring and fall movements.

Confer in Atlanta.--On March 26, Mr. Lincoln with other members of the Bureau's staff attended in Atlanta, Ga., a conference with game and conservation officials of the Southeastern States.

Meets with Wilderness Club.--On March 7 Mr. Lincoln addressed the annual meeting of the Wilderness Club, held at the Midway Club in Philadelphia. His subject was the status of migratory waterfowl. On Sunday March 8, with a large number of the Wilderness Club guests and some of its members, Mr. Lincoln attended a luncheon at the Frank B. Foster farm at Phoenixville Pa., where opportunity was presented to continue the discussion of the night before.

Helps Take Movies of Quail.--With Dr. L. C. Morley, Mr. Lincoln visited the White Oak Quail Farm, Richmond, Va., February 28, to assist in taking of motion pictures of quail. Working with about 20 quail in one of the pens, Dr. Morley and Mr. Lincoln staged two types of habitat, and as the technic of getting the birds to perform properly was soon developed, the motion picture operator got a thousand feet of film.

Land Grant College Biologists Visit Section.--On February 7 the Section was host to a group of biologists directing the cooperative research projects at land-grant colleges. Detailed explanations of the work of the Section were given, and during the following few days several of the men spent considerable time in abstracting data in the files to be used in connection with their studies.

Transferred.--Charles E. Gillham, formerly U. S. game management agent attached to Game Management Region 3, with headquarters at Albuquerque, N. Mex., has been transferred to the Division of Wildlife Research, as an associate biologist, with headquarters at Iowa State College, Ames, Iowa. Mr. Gillham will represent the Bureau as a flyway biologist of the Mississippi Flyway.

Lectures on Conservation of Migratory Waterfowl.--On January 15 Mr. Lincoln addressed the New Century Club in Philadelphia, Pa., his lecture dealing with the conservation of migratory waterfowl, pointing out the various factors that have acted to reduce the numbers of these birds and the steps taken by the Biological Survey for their correction. Three reels of motion pictures were used, one the flyway film



and the other two on natural wildlife resources. After his address he visited the home of Mr. and Mrs. B. F. Myers for a conference concerning the manuscript that Mrs. Myers has prepared on the history of the Tanager Hill (Minn.) banding station.

Banding Work Increases.--The banding work is showing a decided increase over last year's total of about 249,000, reports of nearly 210,000 banded birds having been received up to the middle of May. As most of the large stations will not be heard from until the last of June, the total is expected to exceed greatly that of the fiscal year 1935. Two thousand each of green-winged and blue-winged teal have so far been reported, this number for the blue-winged teal more than doubling its total for any previous year. Last year's total for banded herring gulls was 10,000 while records for 15,000 already have been reported this year. The numbers for the common tern and the purple finch also exceed last year's totals by 1,000.

Reports Golden-crowned Sparrow in Illinois.--William I. Lyon, of Waukegan, Ill., was fortunate enough to capture a golden-crowned sparrow in one of his banding traps recently. This is the only record for this species in Illinois, the only other report for the bird in that vicinity being one observed in Racine, Wis., in April 1858. Mr. Lyon took the bird to the meeting of the Inland Bird Banding Association, at Chicago, where color sketches for the Academy of Sciences were made by Earl Wright.

Ambassador Daniels Reports Records.--Among the interesting recent records resulting from bird banding are two reported by Ambassador Josephus Daniels in Mexico. A black-throated green warbler banded on October 4, 1934, at Overbrook, Philadelphia, Pa., was shot about April 1, 1936, at Tetela, Oaxaca, Mexico. A tree swallow banded on June 16, 1935, at North Eastham, Cape Cod, Mass., was recovered on March 16, 1936, at San Geronimito, Campeche, Mexico.

Mexico to Cooperate in Bird Banding Work.--On February 12 arrangements were worked out with Senor Juan Zinser, Chief, Department of Forestry, Game, and Fish, Mexico City, to carry on banding work in Mexico along the same lines that have been so successful in the United States and Canada. Sr. Zinser hopes to establish several waterfowl stations at strategic points in Mexico and will use official Biological Survey bands on such birds as may be trapped.

Another Bird Crosses Atlantic.--The Biological Survey has received a record for another species that has crossed the Atlantic. A gull-billed tern, banded at Tipperne, Rinkobing Fjord, Jutland, on June 17, 1935, was shot September 5, 1935, in Maynard's Swamp, near St. Peter, Barbados. The bird carried a band marked Zool. Museum, Copenhagen, Denmark RK 2929.

Interesting Banding Returns Received.--Probably the most remarkable return that has been received during the past few years is that for a pintail banded March 6, 1935, at Irvington, Calif., and shipped to Molokai, Hawaii, by Nion R. Tucker. The bird was killed December 4, 1935, at Los Banos, Calif. only a short distance from Irvington. The record has been checked by obtaining the band from the hunter.

J. A. Gillespie, of Glenolden, Pa., reports that "old man cardinal 478679" is still in evidence. The bird was banded by Mr. Gillespie on January 4, 1928, and has been recaptured many times at his trapping station.

An interesting story is connected with the return of a Caspian tern banded July 2, 1935, at Limestone, Ontario, Canada, by William I. Lyon. The bird was recovered at Roseland, Fla., by W. R. Williams, who states: "I had quite an interesting experience with a gray sea gull, fish hawk, and eagle. The story runs like this: The gull tackled a small mullet; the fish hawk tackled the gull for the mullet; and the eagle went in for a general house cleaning. There was an awful mix up. The outcome of it all was: The gull was killed, and I picked it off the water and was surprised to find it was banded bird from the U. S. Bureau of Biological Survey."

Dr. William Pepper reports an interesting case of two red-winged blackbirds banded on April 25, 1931, at Waverly Mills, S. C., and retrapped April 5, 1936, five years later at the same locality. No previous returns had been reported for either bird.

M.J. Magee of Sault Ste. Marie, Mich., reports a rather remarkable record for a purple finch banded as a young bird in 1929, which returned to his station on the following dates: May 10, 1930; April 24, 1931; May 1, 1932; May 18, 1933; May 6, 1934; and May 2, 1936.

From a number of brown pelicans banded in the fall of 1935 at Pelican Island, Mosquito Lagoon, Fla., about thirty returns were received during the winter months in Cuba.

Other interesting returns are as follows: A tree swallow banded July 2, 1934, at Jonesboro, Maine, was recaptured July 4, 1935, in the same nest where it was hatched. A killdeer banded June 27, 1933, at Regina, Saskatchewan, Canada, was killed January 5, 1936, at Annaudville, La. A blue jay, banded July 13, 1935, at Lexington, Mass., was found dead October 25, 1935, at Chattanooga, Tenn. A redpoll banded March 9, 1934, at McMillan, Mich., was retrapped at the same station on February 11, 1936 (this is the first return for a redpoll retrapped at the point of banding). Several pintails banded at Lake Merritt, Oakland, Calif., in the fall of 1926, 1927, and 1928, were retrapped at the same point on November 13, 1935. Three blue geese banded at Avery Island, La., were reported killed in northern Ontario. Two pintails banded at Avery Island, on Feb. 21, 1935, and shipped to Cambridge, Md., were retrapped at the point of banding on January 11, 1936. A pintail banded at Avery Island on February 4, 1935, and shipped to Berkeley, Calif., was retrapped January 11, 1936, at the point of banding. A mallard banded February 13, 1936, at Lakin, Kans., entered the trap so many times during the next few days, that the banding cooperator took the bird to Holly, Colo. (50 miles from Lakin), where it was released. Much to the cooperator's surprise the bird returned to Lakin and was trapped again on February 17, 1936. A lesser yellowlegs banded August 3, 1935, at North Eastham, Cape Cod, Mass., was killed in November 1935 at Sao Paulo, Brazil. A crow banded January 27, 1936, at Norman, Okla., was shot April 22, 1936, at Heath, Alberta, Canada. A herring gull banded July 14, 1927, at Hat Island, Mich., was caught in a skunk trap at Jenison, Mich., April 17, 1936, and as the bird was a juvenile when banded, it is known to have been nine years old when killed. A fish crow banded March 31, 1922, at Avery Island, La., was killed in December 1935 at Jeanerett, La. (13 years old). A red-tailed hawk banded June 30, 1924, at Muscow, Saskatchewan, was captured about March 1, 1936, at Rose, Kans. A pintail banded February 23, 1935, in Lafayette County, Mo., was shot December 8, 1935, near Los Banos, Calif. A purple finch banded August 31, 1934, at Groton, Mass., was killed February 8, 1936, at Warren, Ark. A redhead banded April 21, 1935, at Thief Lake, Marshall County, Minn., was found dead March 24, 1936, at Derry, Pa. Two mallards banded in August 1925, at Lac Ste. Anne, Alberta, Canada, were shot near the same locality

during the fall of 1935. A gadwall banded August 31, 1932, at Davidson, Saskatchewan, Canada, was shot November 16, 1935, near Winfield, W. Va. A bronzed grackle banded May 25, 1934, at Kansas, Ill., was trapped by another cooperator March 15, 1936, at Lakeview, Miss. An egret banded June 16, 1935, at Good Hope, Miss., was shot December 1, 1935, near Belize, British Honduras. A great blue heron banded June 17, 1934, at Lake Bowdoin, Malta, Mont., was shot November 2, 1935, in the Northern River, British Honduras. A least tern banded June 1, 1935, at Tampa Bay, Fla., was captured January 27, 1936, at Greenfield, E.C.D., British Guiana. A common tern banded July 13, 1935, at Yarmouth County, Nova Scotia, was captured April 6, 1936, at Port-au-Spain, Trinidad, British West Indies. A long-eared owl banded April 27, 1932, at Williamston, Mich., was caught in a trap February 15, 1936, at Gladstone. Va.

#### Fur Resources

Visits New York.--Frank G. Ashbrook attended the annual trade meeting of the Milligan and Morrison Ranches in New York City, January 4 to 7, and the banquet preceding the sessions. The meetings, of an educational nature, were attended by approximately 500, including fox farmers, fur tradesmen, and members of the press. Mr. Ashbrook in addressing the meeting, pointed out the importance of fur farming in the agricultural development of this country and said that it is practiced in 35 States and represents an investment of \$50,000,000. He also pointed out that there seems to be a greater tendency to brown in some fox pelts and the quality in half and quarter silver skins has deteriorated during the past 4 or 5 years.

Addresses Home Economics Department.--Frank G. Ashbrook talked to students and faculty of the Department of Home Economics of the University of Maryland, College Park, Md., on December 18. He illustrated his talk by a display of pelts.

Represents Bureau at Canal Hearing.--Mr. Ashbrook on January 29 represented the Biological Survey in the hearings held at Cambridge, Md., on a project for a proposed canal to connect the Great Choptank with a smaller river, and the construction of a sea-level canal from Cambridge, Md., to Fishing Bay via Little Blackwater River. He read a protest from Mr. Gabrielson emphasizing the detrimental effects that this project would have upon the wildlife of the Refuge, and primarily on muskrats in that immediate section. The muskrat farmers, landowners, and citizens of Cambridge joined in protesting the construction of this canal.

Resigns.--Samuel F. Ashbrook, employed as agent at the U. S. Rabbit Experiment Station, Fontana, Calif., since October 16, 1932, resigned effective January 29 to accept a position with an aircraft company at Santa Monica, Calif.

Visits Washington Office.--Dr. G. W. D. Hamlett, agent, located at the Carnegie Institution of Washington, Department of Embryology, Baltimore, Md., on January 23 and May 5 and 8, made visits to the Washington office to discuss the progress of his study of reproduction in the coyote and also to investigate hunters' reports in the Survey files. Dr. Hamlett recently submitted publications for a report on his studies of the reproduction in coyotes. He also presented the information in an address before the American Society of Mammalogists in Philadelphia on May 13.



Former Director Fur Animal Station Passes Away.--Members of the Survey have been saddened by the sudden death of Dr. Karl B. Hanson on January 9. Dr. Hanson was director of the U. S. Fur Animal Experiment Station, Saratoga Springs, N. Y., from 1919 to 1935, resigning on January 5 to accept a position with a large fox farming company. During Dr. Hanson's 16 years association with the Bureau he did outstanding work in studies of breeding, feeding, and the production of equipment in this practically unknown field of husbandry. Dr. Hanson was an industrious and indefatigable research worker, especially in the field of fur-animal diseases. His death is a great loss to this field of veterinary research, and the fur-farming industry will miss his valuable advice.

Fur-Value Study of Wild Rabbits Progresses.--The cooperative study, inaugurated by Chas. E. Kellogg, of the skins of wild jack rabbits and cottontails, which are being supplied by field men of the Division of Game Management in the Shelter Belt Area of the Mississippi Valley, is progressing satisfactorily. Indications are that neither the blacktail jack rabbit skins nor the cottontail rabbit skins have any value as fur, though the pelts undoubtedly can be used for making felt hats.

Cooperative Experiment Formulated on Fur Cleaning.--Following a conference between Dr. Joseph E. Caspe, president of the Technical Association of the Fur Industry, Newark, N. J., Mr. Ashbrook and Mr. Kellogg, and Warren E. Emley and E. L. Wallace of the Bureau of Standards, in January, a cooperative experiment was organized to compare the dry cleaning of furs with common methods now prevailing in the fur trade. The present experiment will be restricted to muskrat skins. A careful check is being made on selected raw muskrat skins through all processes of dressing and manufacturing.

Talks Before Lions Club.--On January 30, Chas. F. Bassett, director, U. S. Fur Animal Experiment Station, talked to the Lions Club at Saratoga Springs, N. Y., on the fur industry in the United States and the work of the experiment station. He exhibited fox skins produced at the station. Mr. Bassett credited the late Dr. Karl B. Hanson with much of the success in the work, which he characterized as outstanding in the fur-farming industry.

Alaskan Visits Station.--J. W. Warwick, of the experiment station staff at Fairbanks, Alaska, on December 26 and January 22 visited the Fur Animal Experiment Station. Mr. Warwick is much interested in comparing the practices in fur production in this country with those in the Territory. Much interest in fur farming has been shown in Alaska during the past few years.

New Fur Animal Feeding Experiments Started.--Experiments in feeding foxes and minks were closed during the last of December, and new experiments with these two species were started at the beginning of the new year. The purpose is to study a simplified dry mixture suitable for foxes and to determine the optimum quantity of raw meat for adult and yearling vixens during gestation and lactation. A new mink experiment has for its specific object the study of simplified dry mixtures suitable for mink feeding in addition to the raw meat that all lots are getting. These studies will be of special importance in the economical production of furs.

Two Litters of Martens at Fur Station.--Director Bassett reports that two litters of martens, of two young each, were born in April at the Fur Animal Experiment Station. These results are highly pleasing because of the difficulty of getting martens to breed in captivity. At the last of April approximately 50 foxes also had been whelped at the station but only two litters of mink had arrived.

Studies Records of Rabbit Station.--Geo. S. Templeton, director of the U. S. Rabbit Experiment Station, Fontana, Calif., has given considerable time recently to reviewing records at the station to determine the most important factors in high productivity. This information is of fundamental importance, and it may influence the prevailing breeding operations in the rabbitry.

"Bloat" in Rabbits Still Serious.--Mr. Templeton reports that rabbit breeders in California have experienced more difficulty with "bloat" this year than previously. In a series of preliminary experiments he has found that moldy hay and green barley apparently are not contributing causes. This study is to be extended to note the effect of vitamin deficiency and the value of frequent changes of feed, particularly proteins, in overcoming this trouble.

Rabbits Make Phenomenal Gains.--Twenty-nine litters of rabbits produced on new experimental rations at the Station have made a constant gain. These 176 young rabbits attained an average weight of more than 4 pounds at the age of 56 days. Those produced on a self-feeder recently designed at the station by Director Templeton attained one-sixth of a pound greater weight at this age than those that were fed by hand. This is the first accurate information that has been obtained in any volume on self-fed rabbits.

Rabbit Station Serves Wide Territory.--During one month recently, Mr. Templeton reports, 117 inquiries on various subjects pertaining to the raising of rabbits were received at the Rabbit Experiment Station. These came from 21 of the 48 States as well as from Cuba and Canada. During this same time there were visitors from 11 States, indicating that the experimental work at the Rabbit Station is becoming increasingly well known. Some of the outstanding visitors were Judge L. J. Griffin, of Colorado Springs, Colo., who is a rabbit judge of international reputation, and T. J. Owen, of Oklahoma City, Okla., a member of the board of directors of the American Rabbit and Cavy Breeders Association, and also a judge of national reputation. Both are commercial producers of rabbits and were deeply impressed with the volume and the character of the practical experimental work being conducted at the station.

Rabbit Breeders Meet at Station.--An outstanding meeting of rabbit breeders at the Rabbit Experiment Station on May 16 was attended by 251 rabbit breeders, feed-mill men, and editors representing 46 cities and towns. The longest distance traveled by any of the visitors was 200 miles, while 17 drove from San Diego, a distance of 150 miles. The rabbit breeders in attendance had from 4 to 450 does in their rabbitries. Old-time members remarked that this was the largest meeting of the kind ever held in the State. Mr. Templeton discussed the various experimental groups and the application of these studies to commercial production. Allan Suitor discussed rabbit breeding.

Disease Control

Addresses Fur Farmers.--At the annual meeting of the New England Fur Breeders Association at Worcester, Mass., on April 8, Dr. J. E. Shillinger spoke on the nature and control of diseases on fur farms. A demonstration was also given on the use of a microscope for identifying the presence of various parasitic worms in individual animals. The members in attendance showed a special interest in the practical demonstration of a microscope suitable for field and farm use.

Confers with Game Management Officials.--During the latter half of April Dr. Shillinger attended the field meetings of officials of the Division of Game Management held at the Wichita Mountain Wildlife Refuge, Okla., and at Denver, Colo., to discuss disease problems in wildlife. In Denver, and en route back to Washington, he had conferences with officials of fur farming organizations to acquaint them with the more advanced methods of protecting fur animals from diseases, and to make plans for more effective relationships between the Bureau and fur farmers. In Madison, Wis., at the University of Wisconsin, he made illustrated lantern-slide addresses to the classes in zoology and animal pathology on the various causes of loss in valuable wild species.

Official Station Changed.--The official station of Dr. L. C. Morley, who has been located at the University of Maryland, College Park, Md., was changed on May 15 to the National Agricultural Research Center at Beltsville, Md.

Investigates Losses on Fur Ranches.--On May 27 Dr. Shillinger went to Pennsylvania to study disease outbreaks on silver-fox farms. Losses have been occurring among valuable stock from diseases the reported symptoms of which are not characteristic of heretofore known infections.

Addresses U. S. D. A. Graduate School.--Dr. Shillinger addressed the graduate school of the Department on February 5 on the subject of wildlife diseases, illustrating his talk with lantern slides.

Investigates Waterfowl and Fur-Animal Losses.--Dr. Shillinger spent most of January in the field investigating losses in waterfowl and fur animals. His trip extended to Mississippi and thence to Wisconsin, Minnesota, and Michigan. He studied locally losses in the Mississippi valley among waterfowl and upland game, which had been reported frequently by field observers. Many of the losses were due to mechanical injury by poachers' guns. Obscure infections of the digestive organs were also noted in some of the waterfowl, which could not be definitely diagnosed with the facilities available. Several important game farming communities were also given attention. Plans were laid for extended field work in fur-animal disease research. While on this trip Dr. Shillinger addressed meetings in various parts of Mississippi, in Chicago, and in East Lansing, Mich.

Report Disease Discovery.--Dr. L. C. Morley and Mrs. Psyche W. Wetmore reported the finding of the organism causing ulcerative enteritis (quail disease). This



organism, which has been sought for by many scientists, is erratic in its behaviour, and special credit is due the investigators who are fortunate in being able to isolate the organism and grow it in pure cultures.

Studies Game Losses in New York.--During the week of February 9, which Dr. Shillinger spent in New York, several days were consumed in working with Dr. E. K. LeDune, pathologist for the New York State Conservation Department, in going over many specimens sent to his laboratory for examination and diagnosis. This afforded an excellent opportunity for the Bureau to procure direct information on the nature of losses occurring in wildlife in that part of the country.

Confers on Lead Shot Poisoning.--Dr. Shillinger and Dr. R. G. Green, collaborator, conferred in New York and Bridgeport, Conn., with officials of an arms and ammunition company on February 11 and 12 to discuss the manufacture of sample shot for experimental purposes. These shot are to be composed of alloys, designed at the University of Minnesota, which are expected to be helpful in solving the problem of lead poisoning of waterfowl. While these products are as yet in their experimental stage preliminary tests have been encouraging.

Appointed.--Mrs. Winifred W. Deering reported for duty in Dr. Shillinger's office on January 6, being appointed in place of Mrs. Gladys F. Collins, whose resignation was effective December 31.

#### MIGRATORY WATERFOWL

North Dakota Governor Visits Arrowwood Refuge.--Governor Walter E. Welford, of North Dakota, visited the Arrowwood Migratory Waterfowl Refuge on May 1, and, after inspecting the Bureau's development work, expressed himself as being tremendously impressed with the conservation program. On his tour of inspection of the many work projects on the refuge, the Governor stopped briefly to assist the CCC boys in the planting of willows, designed to check erosion and to provide shelter for nesting birds. Later, speaking before another camp, he stated: "The Government is doing wonderful work in all of these CCC camps throughout our State to conserve North Dakota's most valuable resource--water."

Appointed Head Photographer.--F. W. Ouradnik was appointed to the position of head photographer on March 2, with headquarters at Washington. His time will be spent largely in the field, getting necessary pictures on established refuges, as well as on areas now under consideration, for the presentation of graphic reports and for the press.

Cooperative Arrangement Effected with W. P. A.--A cooperative arrangement has been effected with the W.P.A. whereby facilities are extended to the Survey for the scrutiny of all proposed W.P.A. projects of such nature as to affect wildlife environment materially. Particular attention is given to drainage projects. In cases that appear to be in conflict with sound conservation practices, the Biological Survey, through its field representatives and cooperators, make an actual field inspection as a basis for its recommendation regarding the project. In this manner the Survey has the assurance that the interests of wildlife will not be impinged upon by the work-relief program, which, because of its very nature, must be hastily instituted. Sedley

Lingo has been designated Bureau liaison officer with the W.P.A.

Historic Bull Island Now a Federal Refuge.--It is of interest to note that the first item in the first issue of the new publication, the Federal Register, which appeared on March 14, was the Executive order enlarging by 5,159 acres the Cape Romain Migratory Bird Refuge in South Carolina. The new acquisition is known as Bull Island and because of an abundance of waterfowl foods and fresh water ponds, will tremendously increase the serviceability to waterfowl of the Cape Romain unit. To those who study early history of America, this area holds a great fascination, chiefly because it furnished the stage for the activities of pirates and British vessels of war and because of the thrilling and intensely interesting events that transpired in that section. It, of course, is only a coincidence, but one could easily attach significance to the fact that, in view of Bull Island's historic background, the Executive order reserving the island for a migratory-bird refuge should appear on the first page of the first issue of the Federal Register, which, in these few weeks, has already assumed considerable importance as a collector's item.

Niobrara Reservation Enlarged.--On February 21 the President signed an Executive order enlarging the Niobrara Reservation in Nebraska, which was established as a bird refuge by Executive Order No. 1461, of January 11, 1912, and enlarged by Executive Orders Nos. 1642 and 3256, of November 14, 1912, and March 31, 1920, respectively.

Three Names Changed.--Three marriages involving changes of names in personnel records have occurred in the Division as follows: On December 21, Miss Winifred G. Baum was married to Calvin Lee Watkins. Miss Ann E. Wilson was married on January 30 to Clarence E. Aldrich. Miss Frances Eskelson was married on February 22 to E. H. Hagen.

North Dakota Easement Projects Nearing Completion.--M. O. Steen, who is in charge of the program of easement-refuge development in North Dakota, which was made possible by a W.P.A. allotment of \$266,240, is making excellent progress on the 33 migratory waterfowl refuge areas under his supervision. Construction and development work on one of the projects is already complete, and on 11 of the others it is estimated, using man-hours of labor as the measuring stick, that 95 percent of the development work has been completed. The program has been geared to top speed, and it is expected that the construction of dams and other water impoundment and control devices, the fencing of nesting areas, and the posting of refuge markers on the remaining 21 refuges will be completed by June 30. This program of refuge development with relief labor is giving to the birds 58,285 acres of protected nesting grounds. Through April 30, the projects had given 164,462 hours of employment to relief labor. The relief expenditure on these projects was \$85,599.75, or 67 percent of the total expenditures through that date. Mr. Henderson, accompanied by A. C. Elmer and R. A. Scderberg, made a hurried inspection of eleven of the "easement refuges" on May 5 and 6. Mr. Steen conducted the party over the areas, pointing out the high spots of each. John Ball joined in the inspection on May 6. The Associate Chief expressed gratification over the progress that has been attained in the face of unusually inclement weather and stated that the easement refuges compare favorably with any of the Bureau's waterfowl refuges.

New CCC Camps Approved.--Seven additional CCC camps were approved by Robert Fechner, Director of Emergency Conservation Work, for development work on Biological Survey refuges during the seventh camp-period (April 1 to August 1). These make a total of twenty-eight Biological Survey camps approved for the seventh period. The new camps and their superintendents are:

St. Marks, BF-1, St. Marks, Fla., J.J. Hedrick, Jr., chief foreman.

Lake Okoboji, BF-1, Milford, Iowa (cooperation, State park), Rush C. Smith, chief foreman.

Blackwater, BF-1, Cambridge, Md., Kenneth Jacobson, assistant architectural engineer.

Bison Range, BF-1, Moiese, Mont., Geo A. Sutherlin, chief foreman.

Charles Sheldon, BF-1, (Nevada), Post Office, Cedarville, Calif., S. A. Young, assistant civil engineer.

Sod House, BF-2, Burns, Oreg., (Malheur Refuge), George W. Beers, chief foreman.

Pea Island, BF-2, Manteo, N. C., H. A. White, chief foreman.

Three Added to Washington Office Personnel.--On May 1 Miss Mary E. Savage was transferred from the Bear River Migratory Waterfowl Refuge to the Washington office, where she is assisting Mrs. Watkins. Miss Gertrude Cavanagh and Miss June Montgomery were appointed on January 23 and February 3, respectively, by transfer from the Agricultural Adjustment Administration.

#### Development and Restoration

Visits Fur-Animal Station.--In April, A. B. Emery went to Saratoga, N. Y., to inspect conditions with reference to improvement work at the Bureau's Fur Animal Experiment Station. The trip was made with Frank G. Ashbrook.

Plans Camp Program.--In March Mr. Emery visited the following camps for the purpose of inspecting the work to be performed during the seventh period: Pea Island Camp BF-2 (proposed at that time and since approved) at Manteo, N. C.; Savannah River BF-1, S. C.; and Swanquarter BF-1, N. C.

Visits Louisiana Refuges.--In January, Mr. Emery made a trip to Louisiana to investigate and report upon the advisability of permitting an oil company to conduct an oil pipe line across the Delta Migratory Waterfowl Refuge. He also visited the Sabine and Lacassine Refuges and after a careful study, selected sites for headquarters buildings, plans for which are now nearing completion. The trip extended through the middle of February.

Construction Under Way.--Bids have been solicited for the construction of a warehouse for the Upper Mississippi Wildlife and Fish Refuge at Winona, Minn., construction of which in the near future is contemplated. Plans also are nearing completion for administration buildings to be erected on 12 refuges throughout the United States.

#### Reconnaissance and Habitat Improvement

Makes South Atlantic Inspection Trip.--W. F. Kubichek has returned from a South



Atlantic inspection trip which included Sea Horse Key, Savannah River Refuge, Black-beard Island, Wolf Island, Cape Romain, Bull Island, and Mattamuskeet. He observed one of the rare ivory-billed woodpeckers and several pileated woodpeckers on the Savannah River Refuge on May 15.

Collects Seeds and Tubers.--Through the medium of the CCC camps on various refuges, seeds and tubers of duck-food plants aggregating 132 tons were collected. The stock was collected in areas where such plants were abundant, making distribution possible to refuges where such plants are highly desirable but not present in sufficient abundance to produce food. Distribution for planting totals 26 tons.

#### Maintenance and Patrol

Manages Upper Souris Refuge.--Effective February 16, Philip Chase was transferred to the Division of Migratory Waterfowl and assigned to the Upper Souris Migratory Waterfowl Refuge in North Dakota, as refuge manager. During the past year and a half Mr. Chase has been a member of the Division of Land Acquisition, serving as junior civil engineer. He has been especially concerned with the preparation of Executive orders establishing refuges. His headquarters will be on the refuge near Foxholm, N. Dak.

New Appointee Dies in Auto Accident.--Luther J. Greer, deputy refuge protector, was instantly killed on December 7, near Hot Springs, N. Mex., when his personally owned car went over a 30-foot embankment. He was returning to the Rio Grande Bird Refuge after mailing his reports to the Bureau. Don A. Gilchrist investigated the accident and made a report to the Compensation Commission. Mr. Greer was fifty-nine years old. He was appointed deputy refuge protector, November 25, 1935, but did not live to receive his first pay check. He was a former deputy sheriff and was loved and respected by everyone in Central, N. Mex. His camp on Elephant Butte Lake was a haven for hundreds of quail and other birds, while waterfowl on the lake near the camp were always present for the daily free feed provided by Mr. Greer.

Report Shifts in Personnel.--W. W. Bennett, formerly of the White River Refuge has been transferred to the Crescent Lake Migratory Waterfowl Refuge in Nebraska, where he is serving as assistant refuge manager.

Harley C. Lawrence, reservation ranger and U. S. deputy game warden at the Upper Mississippi Wildlife and Fish Refuge, has been temporarily detailed to the White River Migratory Waterfowl Refuge, where he is acting in charge.

William T. Krummes was appointed assistant refuge manager of the Medicine Lake Migratory Waterfowl Refuge on April 16 by transfer from the Division of Land Acquisition.

Edward C. Knopp, U. S. Deputy Game Management Agent of the Upper Mississippi Refuge, has been transferred to the Trempeleau Migratory Waterfowl Refuge headquarters buildings. Until the acquisition of the Trempeleau area has been entirely completed, Mr. Knopp will also continue his former duties on the Upper Mississippi Refuge.

Fencing Program Nears Completion.--Under A. C. Elmer's direction, the work of fencing and posting all the Bureau's waterfowl refuges is rapidly nearing completion. An order for 300,000 steel fence posts is now pending, and if delivery is as early as anticipated, the last of the unfenced refuges--Sand Lake, S. Dak.; Valentine, Neb.;

and Delta, La.--will be protected from the intrusion of livestock.

#### LAND ACQUISITION

Migratory Bird Commission Meets.--A meeting of the Migratory Bird Conservation Commission was held on January 14 in Mr. Gabrielson's office, with the following members present: Secretary Wallace; Assistant Secretary of the Interior Charles West, acting for Secretary Ickes; Elmer Higgins, acting for Secretary Roper; Senator Key Pittman, of Nevada; and Senator Peter Norbeck of South Dakota. Mr. Dieffenbach, secretary of the Commission, Arthur A. Riemer, and R. M. Rutherford represented the Division of Migratory Waterfowl.

Inasmuch as the ranking officer of the branch or department of a State to which is committed the administration of its game laws, or his department representative, and in a State having no such branch or department, the Governor, or his authorized representative is ex-officio a member of the Commission, invitations to attend and present their views were sent to the various States in which are proposed acquisitions. George J. Stobie, Game Commissioner of Maine, appeared and reported the approval of the Governor and the State of Maine to the Moosehorn project. Zack D. Cravey, Game Commissioner of Georgia, spoke relative to the Okefenokee project and heartily endorsed the Biological Survey in its acquisition there. Leonard K. Yerger and C. A. Foster from Delaware were present, and Mr. Yerger reported the endorsement of the State of Delaware of the Bombay Hook area. Wilbur C. Buford, Commissioner from Missouri, spoke briefly on the Missouri projects and complimented the Survey on the acquisition work conducted in that State. He pledged the support of Missouri to the establishment of refuges there.

The program presented to the Commission covered the purchase of lands in 28 refuge units, involving 441,622 acres, at a total cost of \$1,300,837 or an average cost of \$2,945 per acre. Probably the most important approval received at this meeting was that of the Okefenokee area in Georgia, comprising approximately 296,000 acres. This area has long been under consideration, but until now the asking price has been prohibitive. This area is a retreat of big-game animals, bear, deer, and one of the few remaining places outside of Florida where may be found flocks of sandhill cranes.

At a subsequent meeting held in Mr. Gabrielson's office on May 7, the Commission approved the purchase of 56,409 acres, 20 refuge units, at a cost of \$499,174.33.

Transferred.--Fred F. Friend, who has been affiliated with this Division since January 1934, has transferred to the Division of Migratory Waterfowl.

Mrs. Creola M. Wilson, clerk-typist, has taken employment in the Department of Commerce, Census Bureau.

Confer in St. Louis.--During the week of March 2, a conference of field leaders of the Division, together with representative of the Solicitor's Office, was held in St. Louis, Mo. Messrs. Dieffenbach, Riemer, Rutherford, and Hicks were present from Washington; Doren E. Woodward and Bert J. G. Tousey, from Ogden, Utah; Albert J. Rissman, Carey H. Bennett, Howard J. Sargeant, Charles S. Cook, from St. Louis; and William T. Krummes and Kenneth C. Kern, from San Antonio, Tex. Following the conference Mr. Dieffenbach visited the Yazoo projects in Mississippi.

In the Field.--In April Mr. Riemer inspected refuge areas and surveying operations in North Carolina, Georgia, Louisiana, Texas, New Mexico, Mississippi, Arkansas, and Missouri.

R. M. Rutherford inspected refuges in Missouri, Utah, Idaho, and Nevada during April.

Messrs. Dieffenbach and Riemer early in May visited the Fur Animal Experiment Station, Saratoga Springs, N. Y., and the Moosehorn Migratory Bird Refuge in Maine.

Mr. Dieffenbach returned the latter part of December from Florida where he inspected proposed refuge areas. On January 27, 28, and 29 he attended the meeting of American Foresters in Atlanta, Ga.

In December Mr. Riemer visited surveying operations in Minnesota, Wisconsin, Missouri, Arkansas, Mississippi, Texas, Louisiana, Florida, and Georgia. He also traveled to North Carolina in January in connection with refuge areas in that State.

Carey H. Bennett and Howard J. Sargeant of the St. Louis office, were in Washington the first of January to assist in compiling necessary data for the Commission's meeting.

Surveying operations are practically completed in the Northern and Western States and parties have been transferred to areas in the South. Mr. Tousey and his crew are temporarily in the Ogden office.

#### GAME MANAGEMENT

Address West Virginia Conservationists.--Mr. Young, F. P. Callaghan, and James Silver spoke at a meeting of the West Virginia State game protective force in the State Capitol at Charleston on January 20. The sessions were held in the House of Delegates Chamber. Governor H. G. Kump addressed the gathering, as also did the State Attorney General, and Director of Conservation, the Chief State Game Protector, and others.

Attends Annual Meeting of Indiana Game Wardens.--Regional Director D. H. Janzen attended the annual meeting of Indiana State game wardens on January 17 and discussed with them the Migratory Bird Treaty Act regulations. He also arranged for the wardens' cooperation in covering Indiana in the Survey's mid-winter waterfowl inventory.

Discuss Model Game Law in Kentucky.--Regional Director Janzen attended a meeting of the directors of the League of Kentucky Sportsmen on January 6 at Frankfort, where plans for a model State fish and game law were discussed. He reports that the newly elected Governor, A. B. Chandler, is much interested in raising the standard of game-law administration in Kentucky and has indicated that he will support the legislation recommended by the Kentucky sportsmen.

Talks on Waterfowl Management.--"Current Problems of Waterfowl Management" was the subject of an address by Mr. Janzen, at a combined meeting of the McKinley Chapter of the Izaak Walton League and the Stark County Sportsmen's League, at Canton, Ohio, on January 11. The motion pictures "Duck Sickness" and "Our Wild Life Resources" were also shown.

Attend Michigan Conservation-Officer Training School.--Mr. Janzen reports the attendance of Agent Creech and himself at the new Michigan officers' 7-day training



school held at Roscommon this year. Both participated in the program, explaining the purpose of the various Federal regulations pertaining to wildlife and outlining the needs for cooperation between State and Federal authorities. An active interest in Federal laws was evident, and considerable information regarding the newly amended Lacey Act was brought to light through the many questions asked by the men regarding its operation in case of illegal interstate shipments of fur animals and deer.

Feeding Activities Checked.--Regional Director Janzen reports that on February 22 he checked the feeding activities of various cooperative agencies along the Detroit River and was pleased to find that all reports of starving ducks could be discounted 100 percent. In cooperation with Albert Dahlke, of Gibraltar, Mich., the Bureau fed approximately three tons of corn and wheat, which resulted also in others taking an interest in the feeding of migratory waterfowl during severe cold weather. Even airplanes were resorted to in scattering grain for the starving birds. Flying over the river, the planes dropped 20-pound paper sacks of grain, which would break open and scatter over a considerable area.

Georgia Game Commissioner Visits Bureau.--On January 14 the Bureau received a visit from Game Commissioner Zack Cravey, of Georgia, who expressed keen satisfaction with reference to the predatory-animal survey conducted in Georgia last year by Regional Director James Silver, assisted by Carlyle Carr. This survey resulted in the annulment of the anti-steel-trap law, which had been on the Georgia statute books for six years, and the passage of a trap law that has brought in an additional income of some \$18,000 from the sale of trapping licenses. The recently enacted State trap law, he reported, has given to the farmers of Georgia a much-needed protection against predatory animals and has greatly benefited many of them through the added income from the sale of skins.

#### Game Management Agents and Game Preserves

New Game Preserve Established.--In connection with the organization of a grazing district under the Taylor Grazing Act, the Desert Game Range was established by Executive order of May 20, 1936, under the joint administration of the Secretaries of the Interior and Agriculture, the primary species to be afforded protection on the area being Nelson's mountain sheep. The range contains approximately 1,000,000 acres.

Confer at Wichita Refuge.--A conference of superintendents of the Survey's big-game preserves was held at the Wichita Mountains Wildlife Refuge, Cache, Okla., April 13 to 15. The superintendents attending the meeting were: Dr. Robert S. Norton, National Bison Range, Moiese, Mont.; Gene A. Amundson, Niobrara Game Preserve, Valentine, Nebr.; Ernest J. Greenwalt, Charles Sheldon Antelope Refuge, Vya, Nev.; Wesley D. Parker, Sullys Hill Game Preserve, Fort Totten, N. Dak.; and Harry H. French, of the

Wichita Mountains Wildlife Refuge, who was host to the conference. Others in attendance were Mr. Gabrielson, Mr. Young, W. E. Crouch, F.L. Earnshaw, Miss Clara Ruth, and Dr. J.E. Shillinger, all of the Washington office; Wm. M. Rush, regional director, Portland Oreg.; Leo L. Laythe, regional director, Denver, Colo.; Don A. Gilchrist, regional director, Albuquerque, N.Mex.; A.E. Gray, district agent in charge of predatory animal control, Oklahoma City, Okla.; E.R. Sans, district agent in charge of predatory animal and rodent control, Reno, Nev.; Milton H. Boone, deputy game management agent, Oklahoma City, Okla.; and William H. Drummond, ranger at the Wichita Mountains Refuge. Wilfrid J. Gregson, architect employed on the CCC projects on the Refuge, spoke at the last session on the work accomplished by the CCC boys attached to the two Wichita camps.

The meetings were held in the large living room at "Buffalo Lodge," headquarters of the superintendent. Mr. Young opened the conference with a brief address, stating the purpose of the meeting, and Mr. French spoke, welcoming the visitors. Mr. Gabrielson then addressed the conference, after which the various superintendents presented their reports, and papers were read on subjects assigned. Dr. Shillinger gave a talk on diseases of animals, which he illustrated with lantern slides. The addresses and papers were followed by discussions relating to administration of the preserves and handling big-game animals and other wildlife, resulting in a better understanding of the work and objectives of the bureau on these areas. Inspection trips were made over the Wichita Mountains Refuge at various times during the conference, and Mr. Gilchrist showed some excellent pictures of wildlife on the evening of April 13 at one of the CCC camps where members of the conference were entertained by the camp personnel. At the close of the conference, Dr. Robert S. Norton offered a resolution, which was adopted, expressing the appreciation of the field men attending the meeting for the opportunity afforded them of becoming better acquainted with the various problems relating to the management of the preserves and the work of the Survey in general, also for enabling them to meet other members of the Survey. It was regretted that owing to illness, Almer P. Nelson, in charge of the Elk Refuge, Jackson, Wyo., was unable to attend the conference. His report was read by Mr. Earnshaw.

Those attending the conference reached the Wichita Refuge in time to attend, along with approximately 125,000 others from adjacent localities and surrounding States, the sunrise service held on the Refuge under the auspices of the Wichita Mountains Easter Sunrise Service Association from 3:30 to 8 a.m. on Easter Sunday.

Visitors at the Washington Office.--Harry H. French, superintendent of the Wichita Mountains Wildlife Refuge, Okla., visited the Washington office on official business and attended the Wildlife Conference held in Washington February 3 to 7. Frank Dufresne, assistant executive officer of the Alaska Game Commission, with headquarters at Juneau, also paid an official visit to the Washington office.

Reports Interesting Observations.--Deputy Game Management Agent Henry V. Williams reports that while on patrol duty in the Platte district during the early part of March it was his good fortune to witness two interesting incidents. "For several days," he writes, "around March 8 there were approximately 8,000 white-fronted geese feeding south of Lexington, Nebr. This was the largest concentration of these geese I ever saw, a most beautiful as well as an interesting sight. A few days later the sandhill cranes began to appear and gradually increased in numbers until they were there in thousands. Often one could hear their calls long before the birds were visible to the naked eye, mere specks in the sky apparently miles above the earth wheeling

around and around in circles as they moved on to the north."

Mr. Williams also reports that he had the good fortune to obtain an authentic record of the rare whooping crane. Game Management Agent Poley and State Supervisor of Wardens V. C. Conover found eleven of these majestic birds feeding a few miles south of Cozad, Nebr., on March 4. As the birds took flight and moved northward, the men followed them in their course for a distance of several miles before losing sight of them. Mr. Williams says that he saw three of these birds north of Cashel, N. Dak., in 1935, the first that he had seen in several years. Mr. Conover reports having seen 18 whooping cranes in the vicinity of Hastings, Nebr., in 1935, which seems to have been the principal concentration point of the birds in the early days.

Sandhill Cranes Observed in South Dakota.—Game Management Agent George M. Riddick reports that on March 18 he saw three sandhill cranes in Bon Homme County, S. Dak., near Running Water, and on March 28 observed about 75 of these birds near Vermillion, S. Dak. He also reports that the flight of blue geese and lesser snow geese did not reach South Dakota until late in March, the first birds having been observed on March 18. On March 29, near Jefferson, S. Dak., he reports having observed approximately 50,000 of the blue and lesser snow geese.

Bureau's Work Appreciated by Hunter.—U. S. Game Management Agent Riddick reports a significant occurrence indicating the sportsmen's appreciation of the Bureau's work. "While checking hunters in my district", he writes, "I chanced to be in an area where the Bureau was building dykes and dams to impound water for a waterfowl breeding and resting place. This area had formerly been a good duck-hunting lake, but the drought during the past few years had caused it to dry up, consequently there was no duck shooting there. While patrolling around what was once a fine lake I came upon a youthful hunter who had a shotgun and other hunting paraphernalia. I asked him if he had a State license to hunt, a duck stamp, and gun plugged. He replied: 'Yes sir, I appreciate too much the good work the Biological Survey is doing in my country in restoring this lake and other hunting places not to obey the regulations made for the protection of our game'."

Nebraska's Largest Reservoir to Be Game Sanctuary.—The waters of the North Platte River are pouring into the recently completed Sutherland Reservoir, which when filled will become Nebraska's largest reservoir, covering several thousand acres and lying in proximity to the Garden County Game Reserve, where it will become a very important concentration area for waterfowl. Game management agents on March 15 estimated the duck population on this reservoir at 300,000.

Assists in Flood Relief.—The Bureau's attention has been called to the activities of Deputy Game Management Agent Robert J. Hawley, of Northumberland, Pa., who took an active and commendable interest in relieving human suffering during floods in the latter part of March. At Sunbury Mr. Hawley organized a small force of rivermen and with boats and a canoe took people from flooded homes, carried food to others, removed sick to hospitals, and transported Red Cross supplies. Later he assisted the authorities in rescue and relief work and in policing damaged homes against looters.



Loons Seen on Ellerslie Lake, Ky.--A recent report received from R. C. Soaper, game management agent stationed at Henderson, Ky., stated that while on patrol duty he had seen 5 loons alight on Ellerslie Lake, Lexington, Ky.--a rare occurrence in that region.

Large Concentration of Band-Tailed Pigeons.--Robt. S. Bach, deputy game management agent, reports that on April 30 he saw a large concentration of wild band-tailed pigeons between Pine Mountain and Sulphur Mountain, Ventura County, Calif. He estimated that the flock contained 30,000 birds.

Freshet Conditions Observed.--Game Management Agent J. C. S. Boswell, stationed at Savannah, Ga., reports that on April 12 he visited the Savannah River Wildlife Refuge with Marion Hutchins, assistant civil engineer, and Edw. P. Creaser, assistant refuge manager. At that time freshet conditions prevailed and water was within two feet of the highway and still rising. Rabbits and raccoons were clinging to bushes. Nine blue-winged teal, also several hundred soras, king rails, clapper rails, and gallinules were observed. Mr. Boswell states: "We killed about 100 moccasins." On April 14, when again he patrolled this refuge, the water was still in flood condition. A female black bear and two cubs were seen in a cypress tree. Ground-nesting birds were just beginning to nest, and loss of such game and eggs was at a minimum.

Reports Large Concentration of Robins.--U. S. Game Management Agent J. V. Kelsey, whose headquarters are at Daytona Beach, Fla., reported in February one of the largest concentrations of robins in that locality that he had ever witnessed. He called to his assistance in protecting the birds the police department and principals of all the schools. Eugene M. Boring, game management agent with headquarters at Mobile, Ala., also reported large numbers of robins, in the locality of Mobile, Satsuma, and Calvert, Ala.

Feeding Waterfowl in Kansas.--John Q. Holmes, game management agent, whose headquarters are at Garden City, Kans., and whose territory includes Kansas and part of Oklahoma, reported on January 12 that, owing to severe weather conditions and scarcity of food for thousands of ducks congregated along the Cimarron River, he had begun feeding the birds in cooperation with the State game officials. In Mr. Holmes's report for the week of February 2 to 8, inclusive, he stated that on Lake McKinney in Kearney County, Kans., he estimated there were 10,000 or more mallards and about 100 Canada geese evidently in need of food. One raft of the birds was half a mile long and 50 to 100 yards wide, and several smaller rafts were noted on this body of water, which was practically frozen over, just a few holes being open and the temperature below zero. Mr. Holmes and the State officials supplied the birds with more than 1,600 pounds of grain during the week.

Whistling Swans Observed in North Dakota.--During the latter part of April Game Management Agent Riddick, while patrolling lakes, streams, and sloughs in Benson, Towner, McHenry, and Ramsey Counties, N.Dak., saw more than 500 whistling swans, a considerable increase over the number observed in that locality in previous years. Mr. Riddick also reports having seen some 50,000 geese--mostly blues and snows--on Lake Alice in Ramsey County, N. Dak. Several hundred canvasbacks were observed in the same

same area, and reports of citizens in that section indicate the largest concentration of waterfowl there in many years.

Reports Duck Observations.--Leo R. Childers, deputy game management agent, reports that as a result of favorable food, water, and weather conditions, more ducks wintered in Colorado this year than in some years past. He reports that about 95 percent of the ducks observed were mallards. While patrolling Queen Lake, near Eads, Colo., he observed two coyotes stalking ducks that were rafted on the ice. After his appearance on the scene the coyotes ran back to shore.

No Bed of Roses.--A recent report from Game Management Agent Poley indicates that enforcement officers do not always lie on a bed of roses. "In order to apprehend an alleged market hunter wanted by the Nebraska Game Department, it was necessary," wrote Poley, "for Deputy Agents V. C. Yelton and Henry Williams, and State Wardens Conover and Herling to take off their clothes and wade a frozen slough before daylight. At the same time Warden Fick and I had to lie on a cake of ice in a small clump of willows at the south side of the river for over three hours, but it was worth it because we caught our man." After his arrest the man told how he had been able to escape on other occasions by crossing the river. He knew every local warden by sight and name and knew just how they worked and when they were in the country.

Walk 5 Miles in Swamp to Arrest Violators.--An agent and his deputies, while patrolling a swamp in Louisiana during February, apprehended four duck hunters with nine ducks. Two of the men apprehended were market hunters, one a second offender. The market hunters in the area operate what is known as a "game warden alarm" system. The officers outwitted them by walking 5 miles through the swamp before daylight and thus getting beyond their sentinels without their presence being detected. When the alarm was sounded it was too late, as the hunters were already in custody.

Winter and Spring Conditions at Elk Refuge Summarized.--Variation in snowfall in the Jackson Hole region early in November and the unusually large numbers of hunters resulted in a somewhat unusual migration of elk to the Elk Refuge from the Teton State Game Preserve. A six-inch snowfall early in November in the western part of the Preserve caused about 3,000 elk that had summered in that region to begin their migration toward the Refuge in the valley. Hunters were scattered over the region from the boundary of the Refuge to the Preserve, and, as a consequence, a large part of the migrating elk that came from the Preserve during the hunting season were either killed or forced back into the higher mountains. By November 30, about 1,200 elk had reached the Refuge, but by the end of December there were only about 900 there and few could be seen in the surrounding country. The kill of elk from the Jackson Hole herd by hunters (about 5,000) was greater than in any previous year. Considerable snow fell in the Jackson Hole section during January, more than at any time in the previous winter, and the heavy snow forced the bulk of the elk herd out of the high mountains into the open ridges, creek bottoms, and valley lands, so that by the end of January there were approximately 3,000 on the Refuge and adjoining ranches that the Survey leased for pasturage. The animals obtained forage by pawing through about two feet of snow, but it became necessary to start feeding them at the Refuge on February 5, the State Game Department having already begun some feeding south of the town of Jackson, where elk had been break-

ing into ranchers' haystacks. Feeding continued at the Refuge until April 19, 1,380 tons of hay being consumed, including hay fed to elk held in corrals for butchering by the State Game Department. During the latter part of March and in April, the State fed about 2,000 elk in the Gros Ventre region with cottonseed cake and baled hay from emergency rations in storage sheds built there. About 2,173 tons of hay and 288 tons of cottonseed cake remain for use in feeding the elk next winter. Of the 4,200 elk that were fed on the Refuge, 93 died from disease and natural causes. Elk in outlying districts survived the winter with light losses.

A census of the Jackson Hole herd was taken March 5 to 8, through cooperation of employees of the Survey, the Forest Service, and the State Game Department. The result showed a total of 18,887 animals in the herd, of which 4,140 were on the three feeding grounds on the Refuge. Animals wintering in outlying districts were counted from an airplane.

The State Game Department slaughtered 541 elk in their program for reducing the Southern Yellowstone or Jackson Hole herd to the approximate maximum that can be cared for. The animals were shipped to a packing house in Cheyenne.

Winter at the Elk Refuge was extremely severe, with heavy snowfalls and blizzards. At one period, no mail was received from outside points for eleven days. At the beginning of April there were three feet of snow on the ground, but by the third week in April it was possible to seed and harrow the lands.

Thirteen deer were on a small butte near Refuge headquarters during March and April. There was a noticeable increase in the waterfowl frequenting the Refuge and the adjacent Flat Creek swamp over the number seen there during the past two years.

Dispose of Surplus Animals at Preserves.--The disposal of surplus big-game animals in herds at the preserves maintained by the Survey was completed in February for the season, except at the Wichita Mountains Wildlife Refuge, Okla., where it is possible to continue disposals of the animals to periods later in the season.

Buffalo and elk at Niobrara Game Preserve, Nebr., were corralled during November, and the animals for disposal were retained in small exhibition pasture. Most of them were disposed of for breeding and exhibition purposes. Six of the elk were donated for breeding purposes on a Nebraska game preserve; one shipment of buffalo and elk went to Cedar Falls, Iowa, for exhibition purposes; the Beaver Park at Cedar Rapids, Iowa, received a buffalo and two elk, and a young buffalo bull was shipped to the Park and Tree Commission, for the city park at Greenville, S. C. In addition, two elk calves of 1935 were sold to a resident of Hastings, Nebr., for exhibition purposes. The animals at Niobrara were corralled without losses, newly constructed fence lanes from the north pasture to the pasture south of the Niobrara River facilitating the work.

Comparatively few big-game animals were removed from the National Bison Range, Mont., during the past season. Those disposed of included 29 buffalo, 7 elk, and 23 mule deer bucks. At Sullys Hill Game Preserve, N. Dak., several crooked-legged young buffalo were sold as meat, but the only other animal disposed of there was a female white-tailed deer that in some unknown way broke a hind leg and had to be destroyed.

At the Wichita Mountains Refuge, 61 buffalo and 25 elk were disposed of from October to March; in September, a buffalo was donated to Central Park, New York City, and five of the Texas longhorns have been sold.



Report Items from Niobrara.--Two yearling bull elk have been liberated in the new elk exhibition pasture south of the headquarters buildings at Niobrara Game Preserve, Nebr. These animals spend a good part of the time along the fence, and five elk in the exhibition pasture on the east side of the highway also spend most of the time along the fence opposite the elk in the other pasture, so that persons driving along the highway can see these animals at all times without coming inside the enclosure.

A little white-tailed buck deer and an old black saddle horse named "Jack" at this preserve have become playfellows, and some interesting pictures of them at play have been obtained.

Six geese were received at Niobrara as a donation from the City of Lincoln, Nebr. Two of these birds are Hutchins's, two are snow, and two are blue geese.

The enrollees of Company 753 CCC on this preserve are publishing a semimonthly paper entitled The Buffalo. Copies of the paper received in the Washington Office have been read with interest.

Report Bison Range Notes.--Earthquakes in the vicinity of the National Bison Range, Mont., had their effect on the new pipeline of the fire prevention system, and some repairs had to be made.

On January 31, a fire discovered in the wall of the well house on the Range, was quickly extinguished through the efforts of Dr. Robert S. Norton, in charge of the area, with the assistance of Mrs. Norton and Clarence Young, who promptly responded to the alarm.

On December 27, Dr. Norton saw the old wild mare that has been on the Bison Range since 1909 and reports that she was then in pretty good shape and just as wild as ever, in fact, "the wildest thing on the Range." Of the 16 wild horses that were enclosed in the Bison Range when the big-game fence was constructed 27 years ago all but the mare have died.

Dr. Norton has been elected an associate member of the Society of American Foresters, through recommendation by members of the local unit to the national organization in Washington.

In February Dr. Norton and his assistants fed about 12,000 ducks at two feeding stations and also a number of deer.

Report Notes on Antelope Refuge.--Following a heavy snowstorm at the Charles Sheldon Antelope Refuge, Nev., Trapper Paul Kemble, on January 18, discovered where three sage grouse had alighted and spent the night in the deep snow on the north slope of Yellow Peak. This is the first time that any sage grouse have been noted on the Refuge in 7 winters. Several were seen in April, much earlier than in other years, and apparently had nests in the vicinity. Mr. Kemble reported seeing also 6 valley quail on a ridge in the center of the Refuge on January 18, tracks indicating that they had spent several days there. Wheat was placed for them, but the birds were not seen, and it is thought that they were on a local migration. Mule deer on the Refuge wintered well. Antelope were present in May in normal numbers.

Severe Weather Experienced at the Big-Game Preserves.--In the Sullys Hill Game Preserve region in North Dakota, the average temperature for January was 11 degrees below zero, and from January 13 to 31 was the coldest period for continued low temperatures that has been recorded for the general region, at times 37 degrees below zero. At the Elk Refuge, Wyo., the temperature reached 28 degrees below, while at the National Bison Range, Mont., where the thermometer does not register more than 40 below, Dr. Norton reported that the temperature was "somewhere between 40 below and the cellar." On February 6, the coldest morning of the winter at Niobrara Game Preserve, Nebr., the temperature was 32 degrees below. At Wichita Mountains Wildlife Refuge, Okla., the lowest temperature for the season was 2 below, which is extremely cold for that section.

#### Law Enforcement

Addresses Sportsmen.--F. P. Callaghan addressed the banquet of the Clinton County Sportsmen's Association at Lock Haven, Pa., on February 27, and the Arlington County Kiwanis Club, at Clarendon, Va., on April 8. During May he spent several days with agents in Illinois, Michigan, and New York.

Jailed for Violating Assault Act.--The first conviction under the recently amended statute making it an offense to interfere with, resist, or assault an officer engaged in enforcing Federal game laws was obtained in Federal court at San Francisco, Calif., on March 28. The offender assaulted the agents first with an oar, then a piece of scrap iron, and also with a hand ax, and threatened afterwards with a rifle to kill both agents. He was sentenced to serve 6 months in jail. This defendant was taken into custody for killing wild ducks in close season on February 15, and on this charge was also given an additional 6 months' jail sentence. Two other cases, one involving the assault of one agent and the other obstructing and threatening the officer with a hammer, are pending in Federal court in Colorado and Nebraska.

The added protection for Federal game agents was accomplished by an amendment to the Act of May 18, 1934 (48 Stat. 780) approved on February 8, 1936, so as to include within its terms any officer or employee of the Department of Agriculture designated by the Secretary of Agriculture to enforce any Act of Congress for the protection, preservation, or restoration of game and other wild birds and animals. The act makes it unlawful to forcibly resist, oppose, impede, intimidate, or interfere with an officer engaged in performing official duties, or assault him on account of such duties, and fixes the penalty at not more than \$5,000, or imprisonment not more than three years, or both. If a deadly or dangerous weapon is used, the penalty is not more than \$10,000, or more than ten years' imprisonment. Where an officer is killed in line of duty, the penalty is, upon conviction, for murder in the first degree, death; for murder in the second degree, imprisonment not less than ten years or for life; for voluntary manslaughter, imprisonment not more than ten years; for involuntary manslaughter, imprisonment not more than three years, a fine not exceeding \$1,000, or both.

Duck Bootleggers Sentenced; Racket Believed Checked.--The wild-duck bootlegging racket in California should be effectively checked, as a result of recent prosecutions in Federal courts. During April, 12 cases were presented in that State. One of the ringleaders who went outside the duck racket and killed four sandhill cranes, was sentenced to jail for 18 months after a jury verdict of guilty. Eight other sentences in

duck-selling cases were: \$50 each (2), \$50 each and one and two years' probation (2), two years' probation (2), \$300 and three months (1), four months (1). For purchasing ducks one defendant was fined \$300, another \$250 and placed on probation for two years for aiding in the sale of ducks; and for offering to sell (1) \$50 and in addition placed on two years' probation.

Another game bootlegger, who sold 13 wild ducks to a Deputy Game Management Agent accompanied by a U. S. Deputy Game Warden at Los Banos, Calif., on December 9, 1935, was arraigned in State court at Los Banos on December 26 and upon a plea of guilty was sentenced to serve 175 days in jail.

Other duck-sale cases resulted in 1 fine of \$250, 3 of \$100, 2 of \$50, and 1 of \$25.

Indicted for Illegal Muskrat Shipments.--Indictments in connection with the unlawful interstate shipment of muskrat skins contrary to the Lacey Act were returned against two fur dealers in Michigan by the Federal grand jury at Detroit on April 8.

Amend Postal Regulations for Fur Conservation.--The following amendment to Section 593 of the Postal Laws and Regulations, effective May 1, 1936, is of interest:

"1. Postmasters shall not accept for mailing any parcel containing the dead bodies, or parts thereof, of any wild animals or birds, or the eggs of any such birds, which have been killed or taken or are offered for shipment contrary to any law of the United States or of any State, Territory, District of Columbia, or foreign country or State, Province, or other subdivision thereof: Provided, however, that the foregoing shall not be construed to prevent the acceptance for mailing of the dead bodies, or parts thereof, of any wild animals or birds, or the eggs of any wild birds, killed or taken during the season when the same may be lawfully killed or taken and the shipment of which is not prohibited by law in the State, Territory, District, or foreign country, in which the same are killed or taken or offered for shipment.

"2. Parcels containing the dead bodies of any game animals, or parts thereof, including furs, skins, skulls, or meat; or of any game or wild birds, or parts thereof, including skins or plumage, or the eggs of any such birds, may be admitted to the mails only when plainly and clearly marked or labeled on the outside thereof with the names and addresses of the shipper and consignee (addressee), and with an accurate statement showing by number and kind the contents thereof: Provided, however that fresh game in any form may be accepted for transmission only to post offices to which, in the ordinary course of mail, it can be sent without spoiling. (See sec. 591.)"

Market Hunter Goes to Jail.--A market hunter of Marksville, La., was arraigned in Federal court at Shreveport on April 2, charged with hunting and killing a wild duck on February 8. He entered a plea of guilty and was given an indefinite suspended sentence on that charge. A suspended sentence in a previous case was revoked, and he was sentenced to jail for 60 days. The defendant had been in jail 39 days before being arraigned and the sentence was additional to the time already served.

Fined \$50: No Duck Stamp.--Fifty dollars was the fine assessed for hunting without a migratory-bird hunting stamp in a case in the Eastern District of North Carolina, disposed of April 6.



Illegal Woodcock Hunter Jailed.--Charged with killing woodcock in close season, a defendant arraigned in Federal court for the Eastern District of Louisiana on April 13 was sentenced to jail for 30 days.

Hunters on Refuge Fined.--Two persons charged with hunting and killing waterfowl on the Tule Lake Refuge in California on arraignment in Federal court at Sacramento at the March term, entered pleas of guilty and were fined \$50 each.

Judge Emphasizes Importance of Federal Laws.--Charged with hunting migratory waterfowl more than 100 feet from shoreline, a defendant arraigned in Federal court at Elizabeth City, N. C., on March 23 was sentenced to 6 months in jail to be released upon the payment of a fine of \$175. Judge Meekins stated: "This law is not merely for the protection of waterfowl but in compliance with a Treaty between the United States and Great Britain for the protection and conservation of migratory birds. The Government is spending thousands of dollars for refuges and nesting grounds for the waterfowl. I understand \$350,000 was paid for Mattamuskeet Lake in North Carolina and other refuges are being bought. . . . This court feels that the laws must be observed and respected and will not tolerate violation thereof." The fine was paid.

Fined.--Two cases against residents of San Jose, Calif., charged with killing ducks by aid of grain and in excess of daily bag limit, were disposed of in Federal court at San Francisco, Calif., during the March term, by pleas of guilty and a fine of \$25 each.

Jailed in Default of Fine.--For killing and possessing nine wood ducks on Reelfoot Lake and hunting in close season, a fisherman and guide was arraigned in Federal court at Jackson, Tenn., on March 23 and fined \$150, and in default was committed to jail for 90 days. He had previously demanded a jury trial but later plead guilty.

Seven Go to Jail.--Seven game law violators in the Eastern District of Louisiana were sentenced to 30 to 60 days in jail for offenses against wildlife-conservation laws during March. One, charged with selling woodcock, was sentenced to 60 days in jail and given an additional one-year jail sentence, suspended. Charged with the same offense, 4 others were sentenced to 30 days in jail. A housewife was placed on probation for 5 years. For selling snipe, a night club operator was sentenced to 30 days in jail. Another defendant received the same sentence for possessing coots in close season. At the same time five other cases were disposed of against violators of the Migratory Bird Treaty Act and one involving a violation of the Migratory Bird Hunting Stamp Act. Possessing a robin cost one defendant \$5. Another paid \$25 for possessing snipe in close season, and killing plovers cost another \$25. Two convicted of hunting ducks from a motor boat paid fines of \$20 each. For not having a migratory-bird hunting stamp, one defendant, who later purchased and exhibited the stamp, received a suspended sentence and was placed on probation for 5 years.

Drive Against Quail Bootleggers Effective.--The Survey's drive against persons bootlegging live quail in interstate commerce contrary to State law recently has proved effective. Two residents of Mississippi who agreed to deliver about 200 live birds in Illinois were apprehended in that State by Bureau agents on December 20, the shipment

was seized, and the men placed under arrest. The Federal grand jury on January 23 returned a true bill in each case. On March 18 the cases were disposed of at Chicago by pleas of guilty and fines of \$25 each. Previous to arraignment the offenders were confined in jail several days.

Close Season Hunter Fined \$100.--A defendant charged with hunting wild ducks during the close season on Platte River was arraigned in Federal court for the District of Colorado on February 20, adjudged guilty, and fined \$100.

Hunt Without Duck Stamp.--Three persons charged with hunting migratory waterfowl without a Federal hunting stamp in possession were arraigned in Federal court at Seattle, Wash., on March 2. All entered pleas of guilty, and the court imposed a fine of \$100 against each defendant, which was suspended for five years.

Fined, Placed on Probation.--For hunting wild ducks after 4 p. m. and with a gun capable of holding more than three shells, a defendant arraigned in Federal court for the Middle District of North Carolina on March 5, was fined \$100 and placed on probation for a period of two years.

Six Fined \$100 Each.--Six persons, one charged with hunting waterfowl without the required stamp, one with using a gun capable of holding more than three shells, and four with hunting ducks more than 100 feet from shore line or vegetation, were arraigned in Federal court for the Eastern District of Michigan on March 3. They entered pleas of guilty. A fine of \$100 was imposed in each case.

Jailed for Conspiring to Violate Lacey Act.--Three persons charged with conspiracy to violate the Lacey Act regulating interstate commerce in wild animals or the dead bodies or parts thereof were found guilty by a jury. Two were sentenced by the Federal court in Michigan on March 21 to serve one year and one month each in the reformatory at Chillicothe, Ohio, and the other to serve four months at the prison farm in Milan, Mich. These men, after unlawfully killing deer in Michigan, transported them into Illinois. They had previously been arrested by the Michigan State Police for illegally possessing and transporting deer, and upon release from the county jail after serving 90 days each were taken into custody on the Federal charge. Several deer were seized by the State. An automobile and a shotgun were also confiscated.

Fined \$500. Sent to Jail.--On December 9, in Federal court at La Crosse, Wis., a hunter charged with hunting and killing two wild ducks in April, entered a plea of guilty. He was sentenced to pay a fine of \$500 and in addition to serve 6 months in jail. In another case disposed of at the same time the defendant was sentenced to 6 months in jail. Sentence was suspended and he was placed on probation for one year.

Caught with 49 Ducks. Sentenced.--Two defendants apprehended in Cameron Parish, La., on November 14 with 49 ducks in possession entered pleas of guilty in Federal court at Lake Charles, La., on December 17. One was fined \$25. The other was given a suspended jail sentence of one year and ordered to serve 90 days in jail on a sentence imposed in 1931 that had been suspended pending good behavior.

27 Fined \$25 Each.--Twenty-seven cases involving game law violations were disposed of in Federal court at Alexandria, La., on January 22 and 23. In every case the fine assessed was \$25 on one count, but in 21 of these cases additional counts were suspended with the understanding that the defendants would receive a jail sentence under the suspended count if again apprehended violating the Federal statute. One case involved hunting without a migratory-bird hunting stamp. The remaining cases were under the Migratory Bird Treaty Act, and the violations involved 1, hunting ducks with gun not properly plugged; 2, hunting ducks prior to 7 a.m.; 2, killing wood ducks; 1, hunting before 7 a. m. and with gun not properly plugged; 1, hunting after 4 p. m., with gun not properly plugged and more than 100 feet from shore; 6, hunting and killing ducks in close season; 8, killing herons; 1, killing a dove in close season; 3, killing robins; and 1, killing 6 robins, 2 woodpeckers, and 1 bluebird.

Sentenced for Killing Ducks in Rice Fields.--On November 2, 1935, in Butte County, Calif., three men hunted and killed more than 150 wild ducks claimed to be destructive in rice fields. On November 5 one of the three men killed 60 additional ducks. The dead birds were seized, and the three men were arrested and arraigned before a United States Commissioner. In Federal court at Sacramento on February 11 all entered pleas of guilty. The owner of the rice field was fined \$300 and one of the other violators \$150. The remaining offender, who had shot ducks on two occasions, was fined \$150 and in addition sentenced to serve 30 days in jail.

Bird Saved; Hunters Fined.--Charged with attempting to kill waterfowl during the close season, a defendant arraigned at Carson City, Nev., on February 18, was fined \$25.

Poisoner Gets Stiff Sentence.--Convicted for the second time in less than four months on charges of possession of poison and placing poison baits for fur-bearers, a resident of Dillingham, Alaska, was fined \$300 and sentenced to serve 4 months and 20 days in jail, in U. S. Commissioner's court on January 17. In addition to the fine and jail sentence the defendant also forfeited 23 fox pelts and lost his license for one year. He was first arrested by Alaska Game Warden Hosea Sarber on August 9 for possession of strychnine poison, at which time a fine of \$150 was handed out by the Commissioner. Late in December Warden Sarber obtained two fox carcasses near the defendant's cabin that showed no marks of having been taken in steel traps. Sarber, with the assistance of the U. S. Deputy Marshall at Dillingham, made an investigation, which resulted in the second arrest.

### Importations

Injurious Species Named.--Based on a declaration by Secretary Wallace on December 26 instructions to customs officials were issued on February 20 by Secretary of the Treasury listing foreign birds and mammals "injurious to agriculture and horticulture." Their importation "is absolutely prohibited, and permits for their importation will not be issued under any circumstances. The list includes the following: Skylark (Alauda arvensis), common or house myna (Acridotheres tristis), crested or Chinese myna or starling (Aethiopsar cristatellus), European bullfinch (Pyrrhula pyrrhula), European yellowhammer (Emberiza citrinella), greenfinch (Chloris chloris), chaffinch (Fringilla coelebs), black or house rat (Rattus rattus), roof, Alexandrian, or white-bellied rat (R. alexandrinus), common or brown rat (R. norvegicus), common



or house mouse (Mus musculus), European rabbit (Lepus cuniculus), European hare (L. europaeus); all species of mongoose or mammals of the family Mungotidae, sometimes known as ichneumons or Pharoah's rats; and all species of fruit bats or flying foxes, or mammals of the family Pteropodidae.

Smuggling Attempt Frustrated.--On March 27 two seamen aboard the steamer Conte di Savoia, from Italy, were detected in an attempt to smuggle in 30 canaries at New York and fined \$60 in addition to the regular import duty. The master of the vessel was also fined \$120 for permitting illegal landing of the birds and for failure to manifest them. A month later, when this same steamer again docked at New York, another attempt was made to smuggle in 12 canaries, 2 cardinals, and 1 parrakeet. The smuggler in this case was a longshoreman, who went aboard the steamer at the dock and conspired with the ship's cook to bring the birds ashore. This attempt also was frustrated when a customs guard became suspicious of the movements of the longshoreman on leaving the vessel. He was searched and the birds were found concealed in his clothing. An investigation disclosed that the cook on board was the instigator of the conspiracy, and he was fined \$91.

Mexican Quail Imported.--During the quail season which closed on April 30, 27,783 bobwhite quail were imported from Mexico, exceeding the number imported last year by 4,425. Of the total number imported this season, 16,000 were entered at Laredo, Tex., and 11,783 at Eagle Pass. Shipments of these quail were limited principally to three States, Indiana, Mississippi, and Texas. Notwithstanding the great demand for the importation of quail from Mexico this year, the Mexican Government declined to grant authorization for the export of more than 28,000 though requests had been received for as many as 300,000.

Rare Species Imported.--Among rare and interesting species imported since the first of the year were 2 magnificent birds of paradise (Diphyllodes magnificus) and 6 fairy blue birds (Grandala caelicolor), from the Orient; 1 twin-spotted finch (Hypargos niveiguttatus), from Portuguese East Africa; and 3 guenon monkeys (Lasiopyga princeps), from the Belgian Congo.

#### Predator and Rodent Control

General Conference Held at Denver.--A general conference of all permanent civil-service employees of the section was held in Denver, Colo., April 20 to 24, to further correlating the work of the Section and to review policies and make recommendations for the further guidance of control projects. Addresses were made by Mr. Gabrielson; Mr. Henderson; Mr. Young; Dr. J. C. Munch, consulting pharmacologist; Dr. J. E. Shillinger, Division of Wildlife Research; James E. Talbert, Division of Administration; E. R. Kalmbach, Division of Wildlife Research; W. E. Crouch; F. E. Garlough, Director, Control Methods Research Laboratory; and Harold Haecker, District Agent. The following speakers from other Government agencies, with whom the Biological Survey has been cooperating, gave interesting and educational talks: A. D. Ryan, Division of Grazing; W. L. Dutton, Forest Service; E. D. Eaton, Soil Conservation; C. E. Rachford, Forest Service; Wm. H. Zeh, Bureau of Indian Affairs; R. R. Parker, Public Health Service; and Dr. C. P. Russell, National Park Service. The address of welcome was made by

City Attorney Ammons of Denver, and an interesting talk was also given by Hon. Edward Johnson, Governor of Colorado.

On Field Trip.--D. D. Green, left Washington on April 9 for an extended field trip to Western States in which control work is being done. He will investigate conditions and assist the field offices with their problems.

Personnel Changes Made.--George W. Kerr, assistant in Idaho, has been transferred as assistant to R. E. Bateman, in Montana.

Harold O. Crowley has returned to the Bait Mixing Plant, Pocatello, Idaho, after spending several months on rodent work in Arizona.

Sherman C. Rogers, Jr., district agent in New Mexico, who has been with the Biological Survey since June, 1930, resigned effective June 4.

Carlyle Carr has been transferred from the Florida-Georgia district to State College, Miss., to conduct investigations of methods to control a species of upland crawfish that is destructive to corn, cotton, and hay crops in the black prairie belt of northeastern Mississippi.

As a necessary reduction in administrative force in predator control in the Arkansas-Oklahoma district, the service of Assistant District Agent Clyde F. Briggs, was terminated December 16. Mr. Briggs's work as an assistant did much to bring about the control of predators, particularly in Arkansas.

Detailed to Washington.--Tom B. Murray, district agent at Boise, Idaho, has returned to his headquarters after being in the Washington office during January and February.

B. E. Foster, district agent at Phoenix, Ariz., spent November and December in the Washington office.

Adolph S. Hamm, district agent from Cheyenne, Wyo., returned to his headquarters early in February after spending December and January in the Washington office.

John C. Gatlin, district agent returned to Albuquerque, N. Mex., his official headquarters, after being in the Washington office during February and March.

Leo K. Couch, district agent at Olympia, Wash., has returned to his official headquarters after spending March and part of April in the Washington office. Mr. Couch has been assigned to duties with the Division of Wildlife Research, in Washington, D. C., for a period of approximately one year. He will be engaged in making investigations of wildlife on forest areas and inspecting CCC game-management projects. John Finley will act as district agent during Mr. Couch's absence.

Roy Fugate, district agent, from Portland, Oreg., is at present on detail to the Washington office for about two months.

Changes Name.--Mrs. Beulah MacLain (formerly Ostendorph), of the Predatory and Rodent Control Section recently announced her marriage to Dr. Marshall M. MacLain.

Discuss Sylvatic Plague Control.--Mr. Henderson, Regional Director Wm. M. Rush, Junior, District Agent John Connors, of the State of Washington, Assistant District Agent Joseph Keyes, of California, and Wm. Fair, of the Control Methods Research Laboratory attended a meeting in San Francisco, Calif., on April 27 and 28 to discuss with

public health and agricultural officials of the western States the problem of controlling sylvatic plague.

Hawaiian Rat Campaign Progresses.--In the rat--abatement campaign in the Hawaiian Islands, F. E. Garlough, director of the Control Methods Research Laboratory, and H. J. Spencer, district investigator, in cooperation with the Territorial Board of Health, the University of Hawaii, the Experiment Station of the Hawaiian Sugar Planters Association, and the Board of Commissioners of Agriculture and Forestry of the Territory of Hawaii have developed satisfactory control methods and have agreed upon a general campaign wherein the Biological Survey will assume the responsibility for supervising and correlating the efforts of the local agencies interested. The investigation revealed an exceptionally heavy infestation of rats, in some cases as many as 80 to the acre. The damage is not confined alone to the destruction of crops, but the danger of dissemination of bubonic plague is of primary consideration to the people of the Territory. Mr. Garlough returned to his Denver headquarters during April, leaving Mr. Spencer in Hawaii to continue the research work. Another rodent-control expert will be detailed to Hawaii about July 1 to assume charge of the operational activities of all agencies interested.

Predator Control Resumed in Missouri.--Predatory-animal control has been resumed in Missouri, under the supervision of A. E. Gray, district agent, who also has charge of work in Arkansas and Oklahoma.

Orchard Mice Abundant.--District Agent E. M. Mills states that in parts of New England this is a "mouse year". Injury to fruit trees in unprotected orchards started last August. The sales of Idaho prepared mouse bait in the New England States have jumped from 10,000 pounds in 1934 to 21,000 pounds thus far during the 1935-36 season.

Rat Control Popular in Louisiana.--Demands for rat poisoning campaigns have kept District Agent R. B. Deen busy in Louisiana and Mississippi since mid-winter. Work in Shreveport, La., was under way on March 1, and was soon to start at Lake Charles. A number of other towns are scheduled. Business men in Shreveport who had contributed funds for bait materials in the campaign last year doubled the amounts given in most instances, a number giving \$50 each. Funds were provided this time for conducting rat control, not only in Shreveport, but throughout the smaller towns and rural parts of the parish.

Coyotes Shrewd.--District Agent W. E. Riter reports that Hunter Vurland Crook while working in the San Luis Valley in Colorado during April found that coyotes had dug out a den hole and then moved about 50 yards away to make their home for the pups under heavy brush. The pups were born under the brush. He has taken two dens made in this manner during the past month.

Cooperates with Texas Centennial.--District Agent C. R. Landon, of San Antonio, Tex., reports that he has furnished the skins and skulls of a family of three ocelots, in addition to other specimens, to be shown at the Texas Centennial Exposition at Dallas.



Large Wolves Captured.--The Texas district reports that E. G. Pope caught 6 red wolves, the two middle toes of each of which were grown together. All were large wolves, each weighing between 40 and 50 pounds. The skin and skull of one have been forwarded to Washington. John Baker recently furnished the skin and skull of a black wolf, which was sent to Washington and identified as Canis floridanus.

Coyote Dens under Snow Drift.--District Agent Roy Fugate, of the Oregon district, reports that Hunter Clifford DeBok on April 6 took a den of 9 coyotes from under a large snow drift in the foothills of Umatilla County. During April Mr. DeBok took 9 coyotes and 124 pups.

Beaver Traps Purchased for Use in Transplanting.--The Oregon State Game Commission recently purchased 30 live beaver traps for use of the Biological Survey for live-beaver trapping on agricultural lands where these animals are doing damage, to be transplanted to national forests and other public lands. This cooperative project will be carried on by the Oregon State Game Commission, the Forest Service, and the Biological Survey.

Record Catch in Wyoming.--District Agent Adolph S. Hamm reports that Hunter Bill Todd working in the vicinity of Shoshoni, Wyo., during April made an all-time State record catch of coyotes--128 pups and 4 adult females.

Dog Learns Safe Porcupine Technic.--In carrying on CCC porcupine control on the Black Hills National Forest, S. Dak., during the past winter Foreman Lawrence A. Licking made use of a dog that he trained to hunt dens, and later the dog developed the technic of locating the animals in trees. When hunting against the wind the dog could scent a porcupine in a tree a quarter of a mile away. Foreman Licking also trained his dog so that unaided he killed porcupines when found on the ground. The dog learned to turn the porcupines on their backs and make his kill by attacking the throat, without getting quills in nose or mouth. Mr. Licking was transferred to an Indian ECW ground-squirrel project on May 1, and his dog is now vacationing on a farm.

Escaped Coyote Caught in Montana.--District Agent R. E. Bateman reports that during November Hunter L.G. Mason working along the Musselshell River took a female coyote with a leather collar around her neck. From all indications this collar had been placed on the coyote when a small pup as it was so tight that it had worn into the skin and flesh of the neck. Before capture this coyote had killed 3 geese, 5 turkeys, and 10 lambs, belonging to local residents.

Deer Killed by Coyotes.--George L. Girard, of the Wyoming district reports that Cooperative Hunter Fred Potter of Encampment, Wyo., found 11 deer that had been killed by coyotes in this area. Marooned in deep snow the deer had been easy victims. The report was verified by a temporary game warden of the Wyoming Game and Fish Department.

Two Coyotes Taken in a Single Trap.--T. B. Murray, District Agent in Idaho, reports and verifies by a photograph that Hunter Bill Nelson took two coyotes in one trap in the vicinity of Dietrich, Idaho, early in November.

Conference Held in Texas.--L. C. Whitehead, district agent in rodent control in Texas, reports a field conference of his personnel held at Dallas, December 3 to 5, at the same time the Texas Agricultural Association met there. Those in attendance were J. M. Hill, Jr., Lubbock; F. W. Dawson, San Antonio; R. B. Hickerson, College Station; Joe B. Lindsey, Fort Worth; Dan M. Foster, Nacogdoches; H. Nelson Elliott, El Paso; J. Edward Barker, Longview; R. Alexander, Dallas; and Roland C. Nunn, Extension Service, College Station.

Rats Destroyed in Old Post Office Building.--Mr. Whitehead also reports that the Old Post Office Building in San Antonio was poisoned thoroughly for the control of rats prior to its being torn down to make way for an enlarged Federal Building. This work was done to prevent any spread of the rats to other parts of the city. In the past the rats in the Old Post Office Building are reported to have been particularly fond of mail bags dispatched to Kerrville, for the reason that these bags were usually made up in the evening for shipment in the morning, and they frequently contained cakes, cookies, and candies meant for students at Schreiner Institute.

Hunter Tom Parker Dies in Texas.--The Bureau had the misfortune to lose one of the best hunters and men in the control organization in the death of Tom Parker on November 30 at the age of 40 years, reports Mr. C. R. Landon. Parker cleaned Hamilton County of red wolves in two years' work, between 1928 and 1930. Since then he has worked in various counties, both in east and west Texas, but most of the time in Dimmit County. Wherever he was located, his work was efficient and he was always successful in creating respect for himself and the organization he represented. He was buried near what is known as the Pilgrim Church in Anderson County, which was organized in 1833, three years before Texas' independence, four of the ten charter members having been Parkers.

Deer Increase in Texas.--Wm. J. Tucker, State Game Warden, estimated that 25,000 deer hunters were in the field when the season opened in Texas on November 16. Until three or four years ago there was practically no hunting in the Davis Mountain country other than by ranch owners, their employees, and a few friends. The increase in deer has been attributed in part to success in predator control.

WPA Projects Approved.--WPA projects for the control of predatory animals have been approved in Utah, as reported in November and December in THE SURVEY. Since that time similar projects have been approved for Idaho and Oregon, under the supervision of the district agents.

Cougar Kitten Presented to National Zoo.--A small mountain lion kitten captured in Montana in February has been presented, through District Agent R. E. Bateman, to the National Zoological Park in Washington, D. C.





# THE SURVEY

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## GENERAL NOTES

President Discusses Wildlife.—Outlining recent accomplishments in wildlife conservation, President Roosevelt spoke at the Mountain State Forest Festival at Elkins, W. Va., on October 1 on "Progress in Wildlife Restoration". "No part of our conservation work," he said, "is more important than the protection of our wildlife." The President described his address as a "brief and incomplete statement of the ways and means by which this Administration has made effective its recognition of the fact that the wildlife in our fields and woods and waters constitutes a resource of vital importance to all Americans, and that it is the responsibility of the Federal Government in cooperation with the States to safeguard it for future generations".

Chief Becomes Doctor of Science.—Conferring the degree of Doctor of Science on the Chief at the 67th commencement exercises of the Oregon State College at Corvallis, on June 1, Dr. W. J. Kerr, former president of the college, read the following tribute: "Ira Noel Gabrielson--biologist; naturalist; original contributor of scientific literature; authority on alpine plants; for 20 years a trusted representative on the United States Department of Agriculture in charge of rodent control in Oregon; executive of large resources and scientist of wide recognition, long cherished as one of Oregon's leading citizens, and recently honored by being advanced to the high post of Chief of the United States Bureau of Biological Survey, with headquarters at the Nation's capital."

Speaks on Wildlife Management.—Among the addresses recently made by the Chief are the following: On October 16, in a local broadcast from WMAL under the auspices of the Rod and Stream Department of the Washington (D. C.) Evening Star, Dr. Gabrielson discussed the diving-duck problem in a talk "Ducks in 1936 and in the Future". On October 14, at a meeting of the American Wildlife Institute in New York, he discussed the organization and results of "Our Cooperative Wildlife Research and Demonstration Program". On September 29 he spoke before the Central States Forestry Conference in Elkins, W. Va., on "Wildlife in Relation to Public Lands." On September 1 in Grand Rapids, Mich., he discussed with members of the International Association of Game, Fish, and Conservation Commissioners the subject, "Practical Application of Game Management". On August 28 he outlined and explained "This Season's Duck Hunting Rules" in a broadcast on the National Farm and Home Hour, and on July 23 he discussed problems of wildlife conservation and restoration on the Western Farm and Home Hour. In addressing the Illinois Sportsmen's Association at Chicago, Ill., on June 29, Dr. Gabrielson informed the sportsmen that more wild ducks returned to their northern nesting grounds this year than in 1935. He pointed out, however, that this gain in numbers is not great enough to justify any let-up in the program to restore the former great flights of waterfowl.

On July 15 Dr. Gabrielson left for a trip to the West. His itinerary included one-day stops at Chicago, Ill. and Albuquerque, N. Mex. In California he attended meetings of the Los Angeles County Agricultural Inspectors Association on July 20, the Western Association of Fish and Game Commissioners at San Francisco on July 22 and 23, and the executive committee of the Sylvatic Plague Group on July 23. He also visited the Charles Sheldon Antelope Refuge, the Elk Refuge, and the Malheur, Bear River, and Red Rock Migratory Waterfowl Refuges before returning to Washington on August 7. After attending the meeting of the International Association of Game, Fish, and Conservation Commissioners in Grand Rapids, Mich., he went to the Upper Peninsula in Michigan and inspected the Seney marshes. Dr. Gabrielson was in St. Louis, Mo., on September 17 and 18 attending the conference of regional directors and game management agents. From St. Louis he returned to the Upper Peninsula in Michigan and on his way there he inspected the Chautauqua bottoms in Illinois. On September 29 the Chief attended the meeting of the Central States Forestry Association at Elkins, W. Va., and on October 12 he went to Brockway, Pa., to attend a school maintained by the Pennsylvania Game Commission. On October 14 he attended a luncheon given by the American Wildlife Institute in New York; October 20 and 21 he was in Pittsburgh, Pa., attending the meeting of the American Ornithologists' Union; and on October 26 to 28 he was in New York attending the meeting of the National Association of Audubon Societies.

Represent Survey at A. O. U. Meeting.--Dr. Gabrielson, Mr. Henderson and others of the Bureau attended the annual meeting of the American Ornithologists' Union, at the Carnegie Museum, Pittsburgh, Pa., October 20 to 22. The following papers were presented by members of the Survey: "Notes on the Clapper Rail", by Dr. Harry C. Oberholser; "Food Studies of the Passenger Pigeon", by Phoebe Knappen; "Food Habits of North American Diving Ducks", by Dr. Clarence Cottam; "Some Food Tendencies of San Francisco Barn Owls", by Clarence Smith; and "In Memoriam: William Harry Bergtold", by Dr. A. K. Fisher, retired. Another, on "The Spelling of the Common Names of Birds", by Wm. H. Chessman and Paul H. Oehser, was read by title. In a brief discussion not listed in the program, W. L. McAtee explained the Survey's restoration program and its accomplishments. Officers elected included Dr. T. S. Palmer, secretary, and Mr. McAtee, treasurer. Herbert L. Stoddard, formerly with the Survey, was among those elected fellows, and Lawrence E. Hicks, in charge of the Survey's cooperative research and demonstration work at Ohio State University, was elected a member. On October 23, an excursion was made to the State game refuge at Pymatuning Lake.

Associate Chief in the Field.--Early in August Mr. Henderson inspected the Moosehorn Migratory Waterfowl Refuge area near Calais, Maine. He stopped enroute at Portland for a consultation with Bertram Smith, regional director, and held consultations with various State conservationists and State officials. Upon his return trip he consulted with State officials and conservationists in Boston, Mass. On September 15 Mr. Henderson left Washington to attend the game management agents' conference at St. Louis, Mo., where he also conferred with the regional directors.

Act Approved for Mexican Treaty.--Federal authority over migratory birds will be reinforced and extended by an Act of Congress approved June 20 by President Roosevelt, as published in a press statement released by the Survey on June 22. The new law is designed to make effective in this country a convention between the United States

and Mexico for the protection of migratory birds and game mammals. This convention was signed February 7, 1936, by Josephus Daniels, American Ambassador to Mexico, and Eduardo Hay, Foreign Minister of Mexico. Ratification by Mexico is yet to follow, and the new law will take effect upon proclamation of the exchange of ratifications. The Mexican treaty also provides for Federal protection of several species not specified in the Migratory Bird Treaty with Great Britain.

Three "Canadas" on 1936 Duck Stamp.--The 1936 Federal duck stamp shows three Canada geese on the wing, one with a Biological Survey band on its leg. The etching for the stamp design is the work of Richard E. Bishop, sportsman and artist of Mount Airy, Pa.

Large Cuban Marsh Becomes Wildlife Refuge.--The Marsh of Zapata in the Province of Santa Clara in Cuba has been declared and set aside as a national refuge for fish and game by Jose A. Barnet, President of Cuba. Jose L. Garcia Baylles, Cuban Secretary of Agriculture, will have charge of enforcing regulations for the protection of wildlife in the new refuge. The Marsh of Zapata covers considerable territory in the Santa Clara Province, and is used by several species of the North American waterfowl that migrate to the West Indies.

Land Policy Committee Appointed.--For studying the lists of land acquisition projects that are submitted to the Survey by the Land Policy Committee, Dr. Gabrielson has appointed a Bureau committee consisting of F. C. Lincoln, chairman, Frank L. Earnshaw, and Raymond C. Soderberg.

Inspect Salt Marshes.--W. L. McAtee and Dr. W. S. Bourn, in company with representatives of the New York State Museum and the Nassau County (N. Y.) Mosquito Control Commission, inspected salt marshes on Long Island, July 12 and 13. The effect of ditching on the ecology of the marshes and plans for increasing the attractiveness of the Jones Beach Bird Sanctuary and preventing it from becoming a mosquito-breeding hazard were considered.

Mr. McAtee also attended and addressed a field meeting of the Allegheny Forest Research Advisory Council held in the Birmingham State College district in central Pennsylvania on July 28 and 29. On May 25, 26, and 27 Mr. McAtee, accompanied by W. R. Van Dersal, of the Washington Office of the Soil Conservation Service, and Ross O. Stevens, regional biologist, and other field employees of that Bureau, inspected provisions for wildlife on projects in North Carolina.

Wins Prize for Animal Trap.--Vernon Bailey, retired naturalist of the Survey and collaborator in the Section of Wildlife Surveys, won a prize of \$50 in the recent annual humane trap contest conducted by the American Humane Association. The prize was based on his accomplishment in constructing a leg-hold device for trapping animals without injury.

Appointed to Wildlife Committee.--E. A. Preble, retired biologist, has been appointed to the Committee on Wildlife and Nature Reserves of the National Research Council. The personnel of the committee in addition to Mr. Preble is as follows: H. E. Anthony, chairman, C. C. Adams, Henry I. Baldwin, R. E. Coker, William S. Cooper, Herbert C. Hanson, G. E. Nichols, and A. H. Wright.



Death of Smith Riley.--Smith Riley, formerly in charge of the Division of Game and Bird Reservations of the Biological Survey, died in Denver, Colo., on August 2. Funeral services were held in the chapel of Walter Reed Hospital, Washington, D. C., on August 6 with interment in Congressional Cemetery. Members of the Forest Service served as active pallbearers. Dr. T. S. Palmer, retired, and W. L. McAtee, of the Biological Survey, were honorary pallbearers.

Mr. Riley was born near Norbeck, Montgomery County, Md., August 28, 1878, and besides public schooling had a special course in the Biltmore Forest School, N. C. He served as head ranger in the Black Hills Forest Reserve under the Interior Department from November 1901 to March 1903. A long and varied experience followed in the Forest Service, with which he was connected from July 1, 1905, until his resignation on July 31, 1920. During this period he held the positions of forest assistant, forest inspector, chief inspector, and district forester. He resigned as district forester at Denver, Colo., when he was stricken by myelitis in partial paralysis after a strenuous trip into the Jackson Hole country in Wyoming in 1919. Upon becoming able to resume work, he received a special appointment as forester of Rock Creek Park, Washington, D. C., under the War Department, which position he held from December 1, 1920, to May 31, 1922. On July 1, 1922, he was appointed assistant in game conservation under the Biological Survey and was placed in charge of the Division of Game and Bird Reservations. He held this position until his ailment forced him to retire on July 31, 1925.

Mr. Riley assisted in field work and the collection of data that were embodied in Department Circular No. 51, "Our National Elk Herds". He also published a number of articles pertaining to game on Government reservations. He was a member of the Society of American Foresters and the American Society of Mammalogists.

Members of the Bureau recognize in Smith Riley a sterling character in every respect and a man who bore his affliction with great fortitude. With a keen and active mind he was always eagerly interested in developments affecting wildlife. A deep and persistent enthusiasm for conservation seemed the inspiration of his every thought and deed.

He is survived by three sisters, Miss Elizabeth B., Miss Ellen R., and Miss Harriot, all living near Norbeck, in Montgomery County, Md., and two brothers, Dr. Benjamin P., Long Island, N. Y., and Maj. Philander Chase Riley, Medical Corps, U.S.A.

Building Program Nears Completion.--The program for completing the South Building is near its finish. Two bridges have been constructed to the Administration Building, one near 14th Street known as the Wilson Memorial Arch, commemorating James Wilson, Secretary from 1897 to 1913, and the Knapp Memorial Arch near 12th Street, in memory of Seaman A. Knapp, who inaugurated the Extension Service. Finishing touches are being put on the second and third wings. Independence Avenue is being widened between the Administration and South Buildings.

Transfer.--Miss Celia E. Levine transferred from the personnel office of the Bureau to the Social Securities Board on August 17.

Memoranda Issued.--The following memoranda to field offices have been issued in the "Administrative Field Office" (Admin. F. O.) series since the last issue of the Survey:

- No. 98 Procurement of tires and tubes for the period May 1 to September 30, 1936. (May 28.)
- No. 99 Procurement procedure changes necessitated by the recent decision of the Supreme Court of the United States on the "Bituminous Coal Conservation Act of 1935"--revocation of Admin. F.O. No. 77 and applicable sections of Nos. 88 and 89. (June 2.)
- No. 100 Purchases of materials from Federal Prison Industries, Inc. (June 8.)
- No. 101 Limitation on expenditure during June. (June 8.)
- No. 102 Field purchase orders prescribed for Field Service. (June 10.)
- No. 103 No memorandum issued under this number.
- No. 104 Rodent control on big-game and migratory waterfowl refuges. (June 18.)
- No. 100 Purchases of materials from Federal Prison Industries, Inc. (Amendment No. 1 to Admin. F. O. Memorandum No. 100.) (June 19.)
- No. 105 Departmental regulations respecting long distance telephone calls effective July 1, 1936. (June 23.)
- No. 106 Regulations governing hours of duty per day and per week. (June 27.)
- No. 107 Communications to the Washington Office. (June 27.)
- No. 108 Absence on leave to be shown on Form Bi-357. (June 30.)
- No. 95 Standard Form 1012e, "Statement of travel by motor vehicle", prescribed for in use lieu of Departmental Form No. 22. (Amendment No. 1 to Admin. F. O. Memorandum No. 95) (June 30.)
- No. 109 Monthly reports of overtime work during period July 1 to December 31, 1936, inclusive. (July 6.)
- No. 110 Regulations of the Department revised effective July 1, 1936. (July 9.)
- No. 101 Limitation on expenditure during June--Failure of field officers to furnish required certificates with vouchers. (Amendment No. 1 to Admin. F. O. Memorandum No. 101.) (July 13.)
- No. 111 Opportunities for economies in expenditures for telegraphic communication. (July 15.)
- No. 109 Monthly reports of overtime work during period July 1 to December 31, 1936, inclusive. (Amendment No. 1 to Admin. F. O. Memorandum No. 109.) (July 9.)
- No. 112 Certification of eligibles in engineering aide grades to be requested from District Managers. (July 27.)
- No. 113 Departmental motor vehicle operators' permits. (July 30.)
- No. 114 Pocatello Bait Mixing Station designated as U. S. Biological Survey Supply Depot. (July 29.)
- No. 115 Basis by Procurement Division for requesting space in Federal buildings. (Aug. 10.)
- No. 96 Amendment of Standard Government Travel Regulations; computation of salary savings in connection with air travel. (Amendment No. 1 to Admin. F. O. Memorandum No. 96.) (August 15.)
- No. 62 Notice of termination of leases and agreements. (Amendment No. 1 to Admin. F. O. Memorandum No. 62) (August 19.)
- No. 116 Advice of discounts and other deductions made on Form 1034 vouchers; prompt submission of vouchers and receipts when discounts are offered. (August 19.)
- No. 95 Statement of travel by Motor Vehicle--Meter readings required on Standard Form 1012e. (Amendment No. 2 to Admin. F. O. No. 95.) Aug. 27.)
- No. 117 Preparation and submission of letter of authorization pay rolls. (August 28.)
- No. 118 Government Tax Exemption Certificates. (September 2.)

- No. 119 Service-station purchases of gasoline and oil; cancellation of credit cards. (September 1.)
- No. 85 Preservation of accounts, records, correspondence files, etc. (Submission of recommendations for authority to dispose of obsolete or worthless papers, files, or records, Amendment No. 1 to Admin. F.O. Memorandum No. 85.) (September 4.)
- No. 120 Contract for Anti-Freeze Compound for use in Government-owned motor vehicles. (September 9.)
- No. 121 Reasonable notice of resignation desired. (September 9.)
- No. 122 Application of certain provisions of permanent leave regulations to employees carried on emergency appropriations and under \$6,000,000 appropriation. (September 16.)
- No. 123 Disposition of receipts for surplus products, privileges, etc., on wildlife refuges. (September 18.)
- No. 124 Use of Remittance Advice Form Bi-1429. (September 18.)
- No. 125 Transportation Requests--Indication thereon of travel by coach at reduced railroad rates. (September 19.)
- No. 109 Monthly reports of overtime work during period July 1 to December 31, 1936, inclusive. (Submission of monthly reports on overtime, Supplement No. 1 to Admin. F. O. Memo. No. 109) (September 19.)
- No. 126 Field purchases under certain Procurement Division contracts mandatory. (October 22.)
- No. 127 Travel by privately owned automobile registered in wife's name--mileage not allowable. (October 26.)
- No. 128 Handling of surplus grain. (October 27.)
- No. 129 Employees may not be excused from duty on local, State, and territorial holidays. (October 30.)
- No. 130 Procurement of tires and tubes for the period October 1, 1936, to March 31, 1937. (October 30.)
- No. 131 Consolidated contracts for gasoline, fuel oil and Diesel engine oil requirements in the United States, for the Fiscal Year 1938. (October 31.)

## PUBLIC RELATIONS

Discusses Sportsmen's Problems.--Col. Sheldon discussed "The Sportsmen's Waterfowl Problem" at a meeting of the New York Conservation Association at Lake Placid on October 17.

Attends Rifle Matches.--Col. Sheldon attended the National Rifle Matches held at Camp Perry, Ohio, in August. He reports that there was a larger attendance this year than ever before, with riflemen coming from every State. Large numbers of the visitors called at the Survey's quarters to inquire about its activities and to take pamphlets and bulletins. The motion picture films of the Survey were particularly popular. These were shown through the courtesy of Mr. Frank Kahrs of an arms company, who loaned a projector for the purpose.

Col. Sheldon reports an encouraging abundance of waterfowl in the marshes adjacent to the rifle range. These marshes have long been famous as a wildfowl con-



centration area. Early in June Col. Sheldon visited Everett, Pa., and attended a field day meeting of the local chapter of the Izaak Walton League. At the evening banquet of the League he explained the work and policies of the Survey.

Tells of New Fauna Publication.--Discussing the subject "Facts About our Fauna", Howard Zahniser on September 4 told listeners of the National Farm and Home Hour about the research work of the Survey reported in the recently issued North American Fauna No. 55, "Mammals of Oregon", by Vernon Bailey.

On July 17 Mr. Zahniser discussed the effects of the drought on wild ducks in the northern Great Plains in a radio talk on the National Farm and Home Hour. On July 3 he talked about the agreement of the United States and Mexico for the protection of migratory birds and game mammals. On June 19 he broadcast a talk on the 1936 Federal duck stamp, and on June 5 he told radio listeners about the duck situation.

Wildlife Exhibits at Virginia Fair.--The Biological Survey cooperated with the Virginia Department of Game and Inland Fisheries in conducting a wildlife exhibit at the State fair held in Richmond, September 28 to October 3. Exhibits furnished by the Survey included one on waterfowl conservation and restoration, another on buffalo and other mammals, and two balopticon lantern-slide series pointing out the usefulness of birds and fur animals. The exhibit was supervised by Mr. Zahniser.

Exhibit Shown at Upstream Conference.--Cooperating with other conservation agencies, the Biological Survey exhibited a set of two dioramas on upland-game restoration at the Conference on Upstream Engineering held in the Commerce Building in Washington, during the week of September 21.

Exhibits Shown at 4-H Club Camp.--Two Survey Exhibits on wildlife conservation and restoration were on display in the entrance to the auditorium in the South Building of the Department of Agriculture during the National 4-H Club camp, June 17 to 24. Delegates to the camp met in the auditorium for assemblies and conferences.

Illustrate Press Releases.--Press statements prepared recently by the Division have contained illustrations suitable for reproduction in newspapers and magazines. The first release told about the Survey's leaflets on fruits attractive to birds and was illustrated with a map of the United States divided into 10 regions for convenience in ordering leaflets that cover a particular area. Another reported the establishment of the Desert Game Range in Nevada for Nelson's mountain sheep. A line drawing of the head of a bighorn sheep appeared on the right side of the first page of the release. Later illustrated statements have shown the breeding ranges and migration routes of canvasbacks and redheads and have shown drawings of both sexes of these ducks in flight and on the water, for aid in identification by hunters.

Biological Writer Appointed.--Arthur W. Susott was transferred from the Press Service of the Department of Agriculture and appointed to the position of biological writer and press assistant in the Section of Current and Visual Information on June 11. In addition to assisting in the preparation of press statements and other material, Mr. Susott will act as managing editor of THE SURVEY. Prior to joining the Press Service in June 1935, he was engaged in newspaper work in the Middle West. He is a graduate of the School of Journalism, University of Wisconsin.

Joins Social Security Board.--Griffin Barry, special writer employed temporarily in the Section of Current and Visual Information, resigned June 18 to accept a position with the Federal Social Security Board. While employed by the Survey he prepared a number of press statements describing the CCC improvement work at several wildlife refuges that he visited.

Official Publications, copies of which may be obtained from the Division of Public Relations, have been issued as follows:

Regulations relating to game, land fur animals, and birds in Alaska, 1936-37, Alaska Game Commission Circular No. 13, 32 pp., illus. April 1936. Received June 1. Marking wild animals for identification, by F. G. Ashbrook, principal biologist, in Charge, Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-57, 3 pp. May 1936. Received June 4.

Classification and price trends of silver fox skins, by C. E. Kellogg, biologist, Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-58, 12 pp. June 1936. Received June 24.

Directions for organizing and conducting rabbit drives. Prepared in the Section of Predator and Rodent Control, Division of Game Management. Mimeographed Leaflet BS-59, 2 pp. June 1936. Received June 24.

Feeding the weaned minks, by C. F. Bassett, director, U. S. Fur Animal Experiment Station, Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-60, 4 pp. June 1936. Received June 24.

Sullys Hill National Game Preserve, North Dakota. Compiled by Clara Ruth, assistant, Section of Big Game Refuges and Game Agents, Division of Game Management. Mimeographed Leaflet BS-61, 5 pp., illus. July 1936. Received July 14.

The mammals and life zones of Oregon. By Vernon Bailey, formerly senior biologist, Section of Mammalogy, Division of Wildlife Research. North American Fauna No. 55, 416 pp. June 1936. Received August 29.

Migratory Bird Treaty Act regulations. Service and Regulatory Announcements--B. S. 84, 9 pp. Aug. 1936. Received Aug. 31.

Suggestions on trapping coyotes and wolves in Alaska. By Harlan H. Gubser, district agent, Alaska District, Section of Predator and Rodent Control, Division of Game Management. Mimeographed Leaflet BS-62, 6 pp. Aug. 1936. Received Aug. 19.

Raising martens in captivity. Prepared in Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-63, 2 pp. Aug. 1936. Received Aug. 21.

Waterfowl hunters--attention: Buy a stamp before you shoot. Poster No. 57 (Bi). 1 p. Issued July 1. Received Oct. 15.

Seasons for migratory game birds, 1936-37. Poster No. 57 (Bi). 1 p. Issued Aug. 1936. Received Sept. 4.

Game laws for the season 1936-37: A summary of Federal, State, and Provincial statutes, By H. P. Sheldon, chief, and Frank G. Grimes, administrative assistant, Division of Public Relations. Farmers' Bulletin No. 1766, 38 pp. Oct. 1936. Received Oct. 7.

Excluding birds from reservoirs and fishponds, by W. L. McAtee, technical adviser and research specialist, Office of the Chief, and S. E. Piper, formerly associate biologist, Division of Wildlife Research. Leaflet No. 120, 6 pp. Sept. 1936. Received Oct. 9.

- Protecting crops from damage by horned larks in California. By Johnson A. Neff, assistant biologist, Section of Food Habits, Division of Wildlife Research. Mimeographed Leaflet BS-64, 10 pp. Sept. 1936. Received Oct. 9.
- Relative weights of young rabbits and does during the suckling period. By Chas. E. Kellogg, biologist, Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-65, 5 pp. Oct. 1936. Received Oct. 21.
- Polygamous mating of foxes. By Chas. E. Kellogg, biologist, Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-66, 4 pp. Oct. 1936. Received Oct. 21.
- Wildlife technology. By W. L. McAtee, technical adviser and research specialist, Office of the Chief. Mimeographed Leaflet BS-67, 5 pp. Oct. 1936. Received Oct. 28.

Outside Publications.--Articles by members of the Survey appearing in outside publications have been reported as follows:

- Aldous, C. M. Game management on forest areas. *Maine Forester* 1 (2): 9-11. May 1936.
- Ashbrook, F. G. Planned improvements for the United States Fur Animal Experiment Station. *Amer. Fur Breeder* 9 (4): 4, 6, illus. Oct. 1936.
- Bode, I. T. What the cooperative wildlife research and demonstration units are doing. *Amer. Wildlife* 25 (4): 56, 61-63. July/Aug. 1936.
- Burleigh, T. D. Brewer's blackbird (Euphagus cyanocephalus) in Alabama. *Auk* 53: 452-453. Oct. 1936.
- Cheesman, W. H. Bureau of Biological Survey. *Americana Annual*, 1936. pp. 88-89.
- Cottam, C. The birds of Nevada. *Condor* 38: 122-123. May 1936.
- The place of food habits research in wildlife management. *Utah Juniper* 7: 16-19, illus. June 1936.
- Status of the black-backed gull. *Auk* 53: 332-333. July 1936.
- Letter to the editor [of the *Auk* concerning injury-feigning among birds]. *Auk*. 53: 481. Oct. 1936.
- Duvall, Allen J. The second occurrence of the Ohio house wren in Maryland. *Auk* 53: 340. July 1936.
- Gabrielson, I. N. My favorite western flowers. *Oregonian* (Portland). June 21, 1936.
- Wild flowers of woodlands charm writer. *Oregonian* (Portland). June 28, 1936.
- Goldman, E. A. A new coyote from Honduras. *Jour. Wash. Acad. Sci.* 26: 32-34. Jan. 15, 1936.
- New pocket gophers of the genus Thomomys. *Jour. Wash. Acad. Sci.* 26: 111-120. March 15, 1936.
- A new otter from Kamchatka. *Jour. Mammal.* 17: 164. May 14, 1936.
- A new puma from Texas. *Proc. Biol. Soc. Wash.* 49: 137-138. Aug. 22, 1936.
- Howell, A. H. Description of a new red squirrel from Isle Royale, Michigan. *Dept. Zool., Univ. Mich. Occasional Papers No. 338*, 2 pp. July 7, 1936.
- Recent additions to the list of Florida birds. *Fla. Nat.* 9 (4): 82-84. July 1936.
- Description of three new red squirrels from North America. *Proc. Biol. Soc. Wash.* 49: 133-136. Aug. 21, 1936.
- Kalmbach, E. R. Additional note on the presence of the European Starling at Camrose, Alberta. *Canad. Field Nat.* 50: 102-103. Sept. 1936.
- Kelso, L. (With Estelle H. Kelso.) A new screech owl from Colombia. *Auk*. 53: 448. Oct. 1936.



- Larson, C. L.; Shillinger, J. E.; and Green, R. G. Transmission of rabbit papillomatosis by the rabbit tick, Haemaphysalis leporis palustris. Soc. Expt. Biol. and Med. Proc. 33: 536-538. Jan. 1936.
- Lincoln, F. C. Returns of banded birds: Second paper. Bird Banding 7: 121-128. July 1936.
- Trans-Atlantic flight of gull-billed tern. Auk 53: 331. July 1936.
- The red-throated loon in Montana--a correction. Auk 53: 320. July 1936.
- The waterfowl situation. Bul. N. Y. Zool. Soc. 39: 184-193. illus. Sept./Oct. 1936.
- No bag limit! Outdoor Amer. (n.s.) 1 (10): 6-7, illus. Aug. 1936.
- McAtee, W. L. What is vermin. Outdoor Life 77 (6): 40-41, 52, illus. June 1936.
- Ali on "Economic Ornithology in India." [Current Science 4: 472-478, Jan. 1936.] (Review). Auk 53: 357. July 1936.
- Forest management and wildlife management. N. Amer. Wildlife Conf. Com. Print. Proc., 74th Cong., 2d Ses., pp. 417-423. Sept. 1936.
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Press and Radio Information and Addresses, copies of which (chiefly in mimeograph) may be obtained from the Division of Public Relations, have been issued as follows:

Doctor of Science degree conferred on Gabrielson. Press statement 1917-36. Released June 9.

Three "Canadas" by Bishop to fly on 1936 duck stamp. Press statement 1893-36. Released June 14.

New alloy for gunshot lessens danger of wild duck poisoning. Press statement 1947-36. Released June 16.

Act approved to put wildlife treaty with Mexico into effect. Press statement 1986-36. Released June 22.

Birds sing closer to house when wild fruits are handy. Press statement 1962-36. Released June 25.

More ducks on nesting grounds, but not enough, says Gabrielson. Press statement 25-37. Released July 6.

Big range for bighorn sheep is set up in southern Nevada. Press statement 47-37. Released July 11.

Drought-stricken ducks flock to Federal refuges. Press statement 65-37. Released July 11.

Duck losses in drought region may be offset by gain in Canada. Press statement 196-37. Released July 30.

Farmers hard-hit by drought get jobs on wildlife refuges. Press statement 225-37. Released Aug. 5.

Duck hunters allowed 30-day open season. Press statement 298-37. Released Aug. 14.

Wildlife Bureau issues book on Oregon mammals. Press statement 459-37. Released Sept. 20.

U. S. sends carload of exhibits to Virginia State Fair. (Extension Service release). Press statement 517-37. Released Sept. 24.

Biological Survey to improve fur animal experiment station. Press statement 522-37. Released Sept. 25.

Cites serious decrease of canvasback, redhead ducks. Press statement 536-37. Released Oct. 8.

Respect for game laws growing, says summary by Biological Survey. Press statement 573-37. Released Oct. 9.

57 Small refuges for ducks and water conservation are established in North Dakota. Press statement 582-37. Released Oct. 12.

Wildlife organization growing, says U. S. Biological Survey. Press statement 617-37. Released Oct. 17.

Birds better kept out of reservoirs than shot out. Press statement 618-37. Released Oct. 17.

Would grow Persian lamb fur on American farms. Press statement 567-37. Released Oct. 18.

To stabilize wildlife population in the National forests is aim. (Forest Service release). Press statement 662-37. Released Oct. 28.

Big game in National forests increased 10 percent in year (Forest Service release). Press statement 670-37. Released Oct. 30.

Don't shoot these ducks! Press statement 675-37. Released Oct. 31.

Surplus big game offered for sale. Press statement 684-37. Released Nov. 2.

No bedbugs on swallows; and bats don't have them. Clip Sheet No. 935. Released May 31.

Safety zones for ducks. Clip Sheet No. 940. Released July 5.

How far can a snake strike? Clip Sheet No. 943. Released July 26.

"Varmints" not so bad as their name implies. Clip Sheet No. 944. Released Aug. 2.

Bounty racket changed squirrels into coyotes. Clip Sheet No. 948. Released Aug. 30.

Life on refuge agrees with trumpeter swans. Clip Sheet No. 949. Released Sept. 6.

Check on trigger fingers. Clip Sheet No. 950. Released Sept. 13.

Fires make huge inroads on forest fish and game. Clip Sheet No. 950. Released Sept. 13.

Bird observers wanted in the South and West. Clip Sheet No. 950. Released Sept. 13.

Zuni prairie dog shuns poison and multiplies. Clip Sheet No. 951. Released Sept. 20.

Diet of prairie dog. Radio release 5527. Farm Flashes, May 29.

Birds banded safely. Radio release. Farm Flashes, June 2.

Conserving wildlife. Radio release. Farm Flashes, June 18.

Berries birds like. Radio release 5603. Farm Flashes, June 22.

Mexico duck refuge. Radio release 5619. Farm Flashes, June 27.

Mexico duck treaty, Radio release. Farm Flashes, July 3.

Rabbit blood study. Radio release 57. Farm Flashes, July 15.

New big game range. Radio release. Farm Flashes, July 21.

Alaska wolf threat. Radio release. Farm Flashes, July 22.

Pineapple and rats. Radio release. Farm Flashes, July 23.

Wild turkey return. Radio release 66. Farm Flashes, July 25.

Pick-pocket gopher. Radio release 4406. Farm Flashes, July 27.

Ducks out of water. Radio release. Farm Flashes, July 30.

Coyotes kill ducks. Radio release 4423. Farm Flashes, July 31.

Kills to save game. Radio release 4427. Farm Flashes, Aug. 1.

Coyote spreads east. Radio release. Farm Flashes, Aug. 3.

Wild swan increase. Radio release. Farm Flashes. Aug. 7.

More swans sighted. Radio release 4442. Farm Flashes, Aug. 7.

Jack rabbit thirst. Radio release 4472. Farm Flashes, Aug. 15.

Canada saves ducks. Radio release 86. Farm Flashes, Aug. 17.

Woods for wildlife. Radio release 4485. Farm Flashes, Aug. 19.



Woods to draw game. Radio release 89. Farm Flashes, Aug. 21.  
Water for wildlife. Radio release 4491. Farm Flashes, Aug. 21.  
Hawks that do good. Radio release 4553. Farm Flashes, Sept. 5.  
Orchard field mice. Radio release. Farm Flashes, Sept. 17.  
Duck survey report. Radio release. Farm Flashes, Oct. 13.  
Duck hunting rules. Radio release. Farm Flashes, Oct. 28.  
Farm game reserves. Radio release. Farm Flashes, Nov. 6.  
The 1936 duck situation. Radio talk by Howard Zahniser, in charge, Section of Current and Visual Information. Conservation Day Program, National Farm and Home Hour, June 5.  
The Federal duck stamp. Radio talk by Howard Zahniser, in Charge, Section of Current and Visual Information. Conservation Day Program, National Farm and Home Hour, June 19.  
The problem of duck conservation. Address by Dr. Ira N. Gabrielson, Chief, delivered at a meeting of the Illinois Sportsmen's Association, Chicago, June 29.  
Treaties for wildlife. Radio talk by Howard Zahniser, in Charge, Section of Current and Visual Information. Conservation Day Program, National Farm and Home Hour, July 3.  
Ducks and drought. Radio talk by Howard Zahniser, in Charge, Section of Current and Visual Information. Conservation Day Program, National Farm and Home Hour, July 17.  
Remarks by Ira N. Gabrielson, Chief, U. S. Biological Survey. Radio talk by Dr. Ira N. Gabrielson, Chief. Western Farm and Home Hour, July 23.  
This season's duck hunting rules. Radio talk by Dr. Ira N. Gabrielson, Chief. Conservation Day Program, National Farm and Home Hour. Aug. 28.  
Facts about our Fauna. Radio talk by Howard Zahniser, in Charge, Section of Current and Visual Information. Conservation Day Program, National Farm and Home Hour, Sept. 4.  
Ducks in 1936 and in the future. Radio talk by Dr. Ira N. Gabrielson, Chief. Station WMAL, Washington, D. C., under auspices of the Rod and Stream Department of the Washington (D. C.) Evening Star, Oct. 16.

#### WILDLIFE RESEARCH

Aids Senate Committee.—Dr. Bell returned August 24 from a trip to Alaska and the Western States. The trip to Alaska was made to obtain information for the Senate Committee on Indian Affairs on the conditions of the native population in Alaska and their relationship to the white population and industrial activities in that territory. Members of the Committee who made the trip were Senator Elmer Thomas, of Oklahoma, chairman of the Committee, Senator Lynn J. Frazier, of North Dakota, and Albert Grorud, attorney for the Committee. Senator Henrik Shipstead, of Minnesota, and Dr. Phillip Smith, of the Geological Survey, also were members of the party.

This party investigated the educational system provided for the native population, including Indians, Aleuts, and Eskimos; health conditions of these peoples; and medical, dental, and hospital facilities provided by the Government and other agencies. The party also studied the mode of living of the natives and their means of livelihood, such as salmon fishing and the canning industries in Alaska, production of fur-bearing animals under wild and controlled conditions, and the use of game birds and animals, including aquatic species, as a source of food and skins for clothing and the building of boats and homes.

Special attention was given by the party to the ownership of reindeer by white populations and its relation to the welfare of native populations and to the requirements for increasing the value of reindeer primarily as a resource for the natives. In addition to extended conferences with individuals and various institutions on features of life and industry in Alaska, formal hearings were held at Ketchikan, Metlakatla, Juneau, Seward, Fairbanks, and Nome.

At Teller the handling of a large number of reindeer in a round-up and the procedure followed by the Eskimos in handling, marking, and recording the herds, in accordance with methods recommended by the Bureau, were observed. In studying land management practices for reindeer production, the party found the recommendations of the Bureau for conserving the forage resources particularly helpful. These recommendations are based on the studies of grazing in Alaska made by the Bureau since 1920.

Stops also were made enroute to Alaska at St. Lawrence Island for visits with native Eskimos, Government teachers, Government nurses, and missionaries; at St. Paul Island, where seal herds and the preparation of seal skins for curing and shipment were observed; and at Anchorage. On the return trip from Anchorage to Seattle, Wash., the party transferred from the U. S. Coast Guard Cutter Chelan to the U. S. Coast Guard Cutter Shoshone. The Cutter Chelan was placed at the disposal of the Committee at Seattle, and for travel between Seward and Fairbanks a special train was provided by the Alaska Railroad.

Enroute to Washington, Dr. Bell made brief visits at Corvallis, Oreg.; Berkeley, Los Angeles, and Fontana, Calif.; the Bear River Migratory Bird Refuge, Brigham, and Logan, Utah; the Survey laboratories at Denver, Colo.; and Ames, Iowa. At these points Dr. Bell conferred with members of the research staff and observed field activities.

### Wildlife Surveys

Organize Section of Wildlife Surveys.--An important step was taken by the Division of Wildlife Research on September 1 to provide more effective organization and coordination of the projects listed under the Division's Biological Investigations. The Division has designated the Section of Mammalogy as the Section of Wildlife Surveys.

This new section, under the leadership of Dr. H. H. T. Jackson, will conduct the work formerly handled by the Section of Mammalogy and other research programs that have been directed by Dr. Bell. These projects include the following: Studies of wildlife as a supplementary farm enterprise; life history, taxonomic and distributional studies of wildlife; game management planning surveys; cooperative research in wildlife management; investigations of wildlife resources of Alaska; and research in forest wildlife relations. The plan of organization is intended to facilitate the development of research activities and to make possible closer coordination of the closely related activities conducted by this research unit. This reorganization also is intended to make possible more effective application of results obtained within the entire group in the interests of land management, agriculture, forestry, and wildlife, and to strengthen and facilitate the work of the Division and its service to other units of the Survey, the Department, and other agencies interested in wildlife research.

Consults Farmers on Income from Wildlife.--J. Paul Miller, who transferred from Mill Village, N. H., to the Washington office last spring, returned recently

from a four months' trip in investigating the possibilities of wildlife as a supplementary farm enterprise. Mr. Miller is the leader of these investigations for the Survey as set up under the Bankhead-Jones Act, and on the trip was accompanied by Burwell B. Powell of the Bureau of Agricultural Economics. Their itinerary included the New England States and New York, Michigan, Wisconsin, Minnesota, North Dakota, South Dakota, Montana, Washington, Oregon, Idaho, Wyoming, Nebraska, Iowa, Illinois, Indiana, Ohio, Pennsylvania, New Jersey, Delaware, and Maryland. Mr. Miller and Mr. Powell interviewed farmers in many of these States to learn what additional income wildlife is providing on their farms and conferred with officials of land grant colleges, game commissions, and various other organizations. Kenneth A. Lawrence, who transferred from the Bureau of Public Roads, accompanied the two men as a stenographer.

Give Help in Wildlife Management.--Practical assistance in wildlife management is being given farmers and other interested persons by the cooperative research units established under the direction of the Survey at land grant colleges. Nine States are now cooperating with the Survey in investigations to learn how to increase, maintain, and use wildlife resources, and to show on trial areas how facts found in research can be applied in a practical manner.

Hundreds of farmers attending the short course at the Texas Agricultural and Mechanical College this past summer became acquainted with the wildlife research program that is under way at this college. Reports reaching the Survey showed that the farmers appeared deeply interested in the possibilities of increasing wildlife on and near their farms.

Eleven boys of a 4-H Club spent several days during August on a field trip sponsored by the research station at the Connecticut Agricultural College. Arthur L. Clark of the Connecticut Board of Fisheries and Game met 90 boys and 80 girls of 4-H Clubs at a short course program and talked on wildlife and directed the discussion that followed.

Finds Leeches Destructive to Coots. Logan J. Bennett, project leader of the cooperative wildlife project in Iowa, reports that during the course of the summer's work Clarence Sooter, graduate assistant, found that leeches exacted a certain toll among young coots. The leeches crawl into the nasal cavity of the young birds and in many cases cause death. The indications are that four leeches may constitute a fatal infection. Death results from a combination of suffocation and loss of blood. Mr. Sooter also found leeches infesting the nasal cavities of young blue-winged teal. The evidence was not nearly so conclusive, however, that they were as serious a mortality factor as in the case of the coot.

The quarterly report of the Iowa cooperative unit contains three publications as follows: Summer Studies on the Cottontail Rabbit, Sylvilagus floridanus mearnsii (Allen), by George O. Hendrickson, reprinted from Iowa State College Journal of Science Vol. X, No. 4, July 1936, pp. 367-371; The Ring-necked Pheasant as a Nesting Parasite of Other Game Birds, by Logan J. Bennett, reprinted from Iowa State College Journal of Science Vol. X, No. 4, July 1936, pp. 373-375; Food Habits of Marsh Hawks in the Glaciated Prairie Region of Northcentral United States, by Paul L. Errington and W. J. Breckenridge, reprinted from "The American Midland Naturalist" Vol. 7, No. 5, pp. 831-848, September 1936. Tom Scott, wildlife extension special-



list with the Iowa unit, conducted lectures and field trips with approximately 1,000 4-H boys and girls during summer camps held throughout the summer in Iowa. Mr. Scott is also preparing a bulletin entitled "Summer Birds".

Reports Texas Accomplishments.--Dr. Walter P. Taylor, project leader in charge of the research unit at College Station, Tex., reports that on September 16 the Extension Service of the Texas Agricultural and Mechanical College assigned R. E. Callender to be extension specialist in wildlife conservation. Dr. Taylor reports that Mr. Callender will work with the 400 county agents and home demonstration agents in the State and with 4-H Clubs, vocational agricultural leaders, future farmers, sportsmen, and farmers throughout Texas.

Hilbert R. Siegler, one of Prof. Aldo Leopold's students, has been serving as field biologist since September 9, taking the place of Henry H. Hahn. Mr. Siegler is observing and keeping records of the field phase of the quail introduction projects. He has been admitted to candidacy for the Ph. D. degree at the Texas Agricultural and Mechanical College, having taken his M. S. degree at the University of Wisconsin. The tentative title of his Ph. D. thesis is "The Effects of Quantitative Observable Environmental Factors on the Numbers of Bobwhite Quail in Selected Areas in Walker County, Texas."

Tandy P. Chenault, a graduate of the State Teachers College, Morehead, Ky., has a graduate fellowship in the Biology Department and is carrying a full course of field work. He is also preparing material on "The Periods of Availability of Game Food Plants in the Vicinity of College Station." This work will be carried on under the direction of Prof. R. G. Reeves and Dr. Taylor. It is hoped that Mr. Chenault will obtain sufficient information to justify preparation of a thesis to be submitted in part fulfillment of requirements for the M. S. degree.

Connecticut Farmers Help.--During September Paul D. Dalke, cooperative wildlife research project leader in Connecticut, made special efforts to have farmers leave corn standing in the fields. These extra field patches or strips would help provide more winter food. Only one farmer in the group approached flatly refused to cooperate. Mr. Dalke had thought of having the farmers paid for leaving standing corn, but he first tried to find out if they would leave corn without receiving any remuneration. This method was successful in all cases.

Makes Inspections.--Leo K. Couch, acting as liason officer between the Forest Service and Biological Survey, inspected ECW work programs in the Lake States Region last summer. Nine national forests were included in his itinerary as well as State forests and game refuges in Michigan. Inspections made with Forest Service officials included, in relation to wildlife, programs dealing with timber stand improvement, roadside cleanup, new road and trail development, improvement in waterfowl environment, and beaver problems arising from stream improvement. Methods used in local studies on game problems, the game and other resources evaluations, and the wildlife plans for each forest received attention. Similar inspections were made of the Allegheny National Forest in Pennsylvania in June. In company with Dr. Clarence Cottam, Mr. Couch on September 29 and 30 inspected areas on the eastern shore of Maryland, near Salisbury, under control of the Resettlement Administration. Submarginal lands retired for farming have been set aside for game and forestry uses. Extensive plantings for quail have been made of corn, maize, buckwheat, soy beans, and other annual crops. Plans are under way

for setting up a nursery to provide perennials, and such mast-bearing trees and shrubs as will provide food for wildlife.

Leaves for Arizona.--E. A. Goldman left September 28 for Arizona to finish field studies of the mammals of this State on which he has been working several years. He plans to make his headquarters at Flagstaff and do most of his field work in north-western Arizona and in several scattered localities in the State. Luther C. Goldman will assist him. In studying the mammals of Arizona, Mr. Goldman has found it necessary to review in detail the taxonomic relations of all the wolves of North America. Descriptions of some of the unrecognized forms he has discovered and a brief synopsis of the group are to be published soon.

Names New Puma for Young.--Under the name Felis concolor youngi a new subspecies of puma, or mountain lion, was recently described from Bruni Ranch, near Bruni, southeastern Webb County, Tex., by E. A. Goldman. "The new geographic race," said Mr. Goldman, "is named for Stanley P. Young, under whose direction the specimens were collected." In describing the animal's general characteristics, Mr. Goldman found youngi to be "closely allied to Felis concolor azteca of the Sierra Madre of Chihuahua, but usually larger and upper parts lighter, more suffused with gray, less distinctly tawny; black on tip of tail usually more restricted; cranial details, especially heavier dentition, distinctive."

Participate in Farmers' Short Course.--Dr. H. C. Oberholser and I. T. Bode represented the Survey during the farmers' short course week at College Station, Tex., July 21 to 24. The cooperative wildlife research station under the direction of Dr. Taylor carried out a program of wildlife work with the farmers, county agents, and 4-H club groups. This included a series of round-table discussions with county agents on the coordination of wildlife work with farm educational programs, general meetings with the 4-H club groups, and meetings on wildlife and conservation. During three full afternoon field trips, which were well attended, the application of wildlife management to farm practice was illustrated. The farmers appeared genuinely interested.

Dr. Oberholser also stopped at several points on his way to College Station and on his return to Washington to confer with persons interested in wildlife conservation and to lecture on wildlife. These points included Memphis, Tenn.; New Orleans, La.; Houston, San Antonio, Austin, Fort Worth, and Dallas, Tex., and Des Moines and McGregor, Iowa. In visiting the Wichita Mountains Wildlife Refuge, Oklahoma, he gave three talks before members of C.C.C. camps that are working on the refuge.

Visits Wichita Refuge.--During the latter part of June Dr. H. H. T. Jackson spent several days at the Wichita Mountains Wildlife Refuge, Oklahoma, to check up on the general conditions of wildlife and to plan research projects in game management to be undertaken there. This refuge is designated to become one of the main field research laboratories of the Bureau. The first group of research workers to be permanently assigned to the refuge will be appointed shortly.

Assigned to St. Paul.--Shaler E. Aldous reported to the Washington office on August 4 for conferences on the bird-control investigations that he made in the Southwestern States and for laboratory work in the Section of Food Habits. He also

conferred with officials of the Division regarding his new assignment to the Lake States Forest Experiment Station, St. Paul, Minn., where he will engage in forest wildlife research. This position was formerly held by Clarence M. Aldous, recently transferred to Orono, Maine. Mr. Aldous reported at his new official station in October.

Confer With Biologists.--Prof. A. B. Howell, of the Department of Anatomy, Johns Hopkins Medical School, Baltimore, Md., and Henry C. Raven, of the American Museum of Natural History, New York City, conferred with biologists of the Bureau at the mammal laboratories on September 22.

Addresses Rural Affairs Institute.--E. A. Goldman spoke on "How Farmers Can Cooperate in the Development of a Long-time Conservation Program for Game and Wildlife" on July 30 at the annual Institute of Rural Affairs at the Virginia Polytechnic Institute, at Blacksburg. Mr. Goldman also took part in the round-table discussion by the wildlife section of the Institute.

Congressman A. Willis Robertson, of Virginia, who preceded Mr. Goldman on the program, spoke on "The Importance of Conservation of Game and Wildlife." He spoke appreciatively of the work of the Survey and its cooperation with the State of Virginia and with the game management setup at Virginia Polytechnic Institute.

Studies Small Mammals and Ticks.--In cooperation with the Bureau of Entomology and Plant Quarantine, A. H. Howell spent a week last summer at Martha's Vineyard, Nantucket Island, and other islands off the coast of Massachusetts in studying small mammals in connection with tick investigations. Mr. Howell also collected mammal specimens the last week of May along the coastal region of southeastern Virginia and North Carolina. He was accompanied by Allan J. Duvall.

Lectures on Mammals.--Mr. Howell, on August 5, lectured on mammals of the District of Columbia before the Rockville, Md., Chapter of the Izaak Walton League. He used a number of specimens from the Survey collection in explaining his talk.

Consults Bureau on Florida Mammals.--Dr. Harley B. Sherman, in charge of the Museum of the University of Florida, recently conferred with the staff of this section and consulted the Bureau's files on mammals to obtain information on the proposed work on mammals of Florida. Dr. Sherman also does field work in general zoology.

Accepts College Position.--H. Harrison Hoyt, formerly employed by the Bureau as a junior wildlife conservationist in game management studies, has accepted a position with the Utah State Agricultural College, at Logan. At this college Mr. Hoyt will work closely with Dr. D. I. Rasmussen, cooperative research project leader for Utah.

Visits Mammal Laboratories.--Carrington Weems, New York City, who has cooperated with the Bureau several years in mammal research, visited the mammal laboratories on July 11 to discuss wildlife conservation and to examine specimens of mountain sheep that he helped to collect for the Bureau in Baja California.



Appointed Junior Biologist.—William H. Marshall has been appointed junior biologist in the Section of Wildlife Surveys with official headquarters at the Bear River Migratory Bird Refuge, Utah. Mr. Marshall was formerly with the Forest Service at Amherst, Mass. Last winter he did field work for the Division of Migratory Waterfowl in Florida and since March has been with the Utah State Agricultural College.

Inspect Camp Lee Site.—Dr. Jackson and A. L. Nelson inspected the Camp Lee site in Virginia on July 18 which is being considered as a possible research refuge.

Return from Aleutian Islands.—The Survey's motor-ship Brown Bear arrived in Seattle, September 21, after completing a biological investigation trip to the Aleutian Islands and other parts of coastal Alaska. The trip was begun in April. O.J. Murie and Cecil Williams, who were carrying on the studies, have returned to their respective headquarters in Jackson, Wyo., and Washington, D. C.

Despit poorly charted seas, fog, rain, and williwaws, and rocky shores, the party was able to land on most of the islands. Mr. Murie and Mr. Williams report that all the islands have an abundance of mosses, grasses, sedges, and flowering plants, but no native trees. Thousands of auklets, murres, puffins and other sea birds avail themselves of the steep slopes and jumbled rocks of the islands for nesting. There appears to be a different species of ptarmigan for each island. Winter wrens, leucostictes, song sparrows, and Aleutian sandpipers are common. Fox farming, under which the stock runs wild and seeks its own food, is seriously reducing the population of some of these birds. Investigations were made of this condition and remedial measures sought. There are no native land mammals other than the foxes on islands west of Umnak. Hair seals and sea lions, however, were common. The party learned much about the habits, abundance, and distribution of the sea otter, an animal believed to be on the verge of extinction.

During August Mr. Murie and Mr. Williams visited Nunivak Island and report it a satisfactory range for the musk oxen that were recently introduced there. On Kagamil Island they discovered a pre-Russian native burial cave. Although foxes had caused considerable damage to many mummies in the cave, some were well preserved and were turned over to Dr. Hrdlicka of the Smithsonian Institution, who was conferred with at Kiska Island. On the return journey stops were made at various points along the Alaska Peninsula, the Shumagin Islands, and southeastern Alaska. At Juneau the party conferred with Frank Dufresne, executive officer of the Alaska Game Commission.

#### Food Habits Research

Investigate Mosquito Control Work.—Dr. Clarence Cottam and Dr. W. S. Bourn late in September investigated mosquito control projects in New York City and other points in New York, New Jersey, Delaware, and Maryland and the effects of this work on habitats of migratory waterfowl, and conferred with members of the Bureau of Entomology and Plant Quarantine on similar studies. Dr. Cottam also inspected waterfowl areas in Maryland, Delaware, and New Jersey in June to determine the effect of the control work on waterfowl habitats. With Dr. Bourn, he also visited the Montezuma Marshes in New York during the latter part of June.

Dr. Cottam left the Washington office on July 15 on an extended inspection trip to various areas in States west of the Mississippi River and for conferences with employees of the Survey. He returned to Washington on September 8.

Inspect National Forest.--A. C. Martin and Franklin H. May, both of this Section, made a field trip to the George Washington National Forest, near Harrisonburg, Va., October 7 to 10, to study food and feeding habits of the wild turkey and to collect plant specimens useful for reference material in diet determinations. They also visited the Big Levels Game Refuge, which is part of the forest domain.

Inspects New England Waterfowl Areas.--F. M. Uhler returned to Washington on August 21 after spending more than a month in the New England region inspecting waterfowl feeding grounds in cooperation with the State Game Departments of Connecticut, Maine, and Vermont. He also assisted in training State and local wildlife students in the identification of waterfowl foods and in propagation principles. While in Piscataquis County, Maine, Mr. Uhler was joined by G. Swanson and C. M. Aldous of the cooperative research program in a study of diving-duck nesting and feeding grounds. Later he joined Associate Chief Henderson and Regional Director Smith on an inspection trip of the Moosehorn Woodcock Refuge near Calais, Maine.

Enroute to Washington Mr. Uhler made a brief study of damage to early grapes by orioles in the vineyards near Poughkeepsie, N. Y. He made recommendations for experiments for protecting the grapes against further damage.

Address Audubon Societies.--Doctor Cottam and W. S. Bourn were among the representatives from the Biological Survey, who attended and addressed the National Association of Audubon Societies National Convention in New York City, October 26 to 28. Dr. Cottam spoke on "The Effects of Drainage on Animal Life"; and Dr. Bourn on "The Effects of Drainage on Plant Life."

Observes Refuge Conditions.--Neil Hotchkiss returned on October 8 from a three and one-half months' trip in 14 western States and Texas and Louisiana, where he studied marsh and aquatic vegetation and water conditions on existing and proposed waterfowl refuges. General observations were made on waterfowl and seed material was collected for experimental work in the propagation of duck-food plants.

Visit Possible Waterfowl Refuge Sites.--A. C. Martin, in company with John Lynch, of the Migratory Waterfowl Division, spent July 30 to August 25 in New England and adjoining States making a reconnaissance of possible waterfowl refuge areas. As a result of their work a new area suitable for refuge development was discovered. While in New York State they cooperated with the State Game Department in furthering its waterfowl program. A number of possible sites for State refuges were inspected. Enroute to Washington Mr. Martin inspected the Pymatuning Refuge and assisted Pennsylvania game officials in outlining a program for the improvement of food conditions there.

Completes Duck Studies on Lower Souris.—E. R. Kalmbach completed studies of duck nest mortality on the Lower Souris Migratory Waterfowl Refuge for this season at the end of July. Final figures show that records were obtained for 351 individual nests of various species. Although findings of the studies have not yet been analyzed, Mr. Kalmbach has indicated that the results will vary greatly from those obtained last year during the Canadian investigations.

Inspects Proposed Refuge Areas.—C. C. Sperry left Denver early in August on an extended trip through Kansas, Colorado, Wyoming, and Montana to inspect proposed refuge areas and to engage in general refuge reconnaissance work. He stopped at the Malheur Refuge and assisted in developing a food planting program for that area.

Completes Quail-Armadillo Studies.—The study of armadillo habits on quail areas in Texas was continued this season by S. E. Aldous, who spent June and July checking the mortality of quail in nests in the vicinity of Huntsville. In addition to observing many normal quail nests, he studied predation on a large number of dummy nests. These nests, supplied with a set of infertile quail eggs, were made to resemble quail nests. A general report on the economic status of the armadillo will be forthcoming as a result of this and other similar studies made in recent years.

Doves More Abundant in California.—J. A. Neff, of the Sacramento office, states that in June and July there was an unusual abundance of doves in most of the sections of California through which he traveled. Similar comments, he reports, have also been made by cooperators, who have banded more than 200 nestling doves. The increase in the dove population is believed to be due largely to the shortened gunning season last year.

Attends Meeting of Game and Fish Commissioners.—Harold L. Blakey attended the annual meeting of the Midwest Game and Fish Commissioners Association at Madison, Wis., on June 16 and 17, and officially represented W. C. Berford, of the Missouri Fish and Game Commission. At the meeting Mr. Blakey presented a paper on "The Experiences with and Possibilities of Establishing the Wild Turkey as a Game Bird in Missouri". Mr. Blakey had been engaged in wild-turkey management research for the Missouri Game Department for several years, and in January 1935 joined the staff of the Forest Service to make wildlife studies on the forests. He was transferred to the Biological Survey in January 1936 to continue this work and serve as Bureau representative in the cooperative turkey and other wildlife studies on forests in the Central States.

Check Chemical Tests on Grass Plots.—F. M. Uhler and Clarence F. Smith spent several days in June inspecting areas in peninsular Maryland, including the Blackwater Migratory Waterfowl Refuge. They also visited Cobb Island off the coast of south-



eastern Virginia and the Dismal Swamp, Virginia. The trip was made to inspect the holdings of a local duck club in Virginia, where excellent waterfowl food conditions prevail in extensive marshes, and to check the chemical tests made a year ago by Mr. Uhler at the Blackwater Refuge. On the refuge five different chemical solutions were tested (in various concentrations) to determine satisfactory means for controlling the undesirable needlegrass (Juncus roemerianus) and the saltmarsh grass (Spartina patens), which choke out valuable waterfowl foods. Already gratifying results have been obtained in several of the test plots.

Continue Study of Economic Status of Foxes.--A. L. Nelson left Washington on June 5 for Petersburg, Va., and vicinity to continue investigation of the status of foxes on game areas. He made intensive studies of fox depredations at the Camp Lee Game Refuge, and reports that in addition to collecting a large number of fox droppings for food analyses, he kept a series of 43 quail nests under observation to ascertain the extent preyed upon by foxes. Fifteen dummy nests also were prepared to determine more accurately the nest-destroying habits of foxes. Nests of other ground-nesting species were studied for data on losses caused by foxes. Ray Greenfield was employed temporarily to assist Mr. Nelson, who returned to Washington on July 4. In the latter part of June, Dr. Cottam visited Petersburg and areas nearby to inspect upland game food resources.

Study Effect of Deepening Canal.--Mr. Uhler, accompanied by Mr. Smith, made a short trip late in September to Cambridge, Md., and several points in Delaware and Pennsylvania to investigate and inspect waterfowl food conditions. The possibility of damage to waterfowl food areas in the Susquehanna Flats by the deepening of the canal between the Chesapeake and Delaware Bays and the removal of locks was studied. Water samples were collected for comparison with analyses of water previously collected. These samples were tested for degree of salinity.

Investigates Waterfowl Food Conditions.--During June Neil Hotchkiss joined W. F. Kubichek in a brief investigation of waterfowl food conditions on the White River Migratory Waterfowl Refuge, at Stuttgart, Ark., and assisted in outlining a program for the improvement of food conditions there.

Continues Surveys in Pacific Northwest.--T. H. Scheffer spent part of June along the coast of Oregon in continuing the survey of natural food resources for waterfowl in the Pacific Northwest. He also attended meetings of the Pacific Division of the American Association for the Advancement of Science on June 18 and 19.

Inspects T.V.A. Areas.--Mr. Martin inspected lake areas in the Tennessee Valley region late in June and conferred with T.V.A. officials regarding plans for development of wildlife resources on the various projects. He reported that with due consideration to the importance of wildlife the potential value of the impounded lakes to waterfowl would be high.

Distribution and Migration of Birds

Investigates Duck Situation in British Columbia.--Luther J. Goldman, accompanied by U. S. Game Management Agent Clifford L. Fretwell, investigated waterfowl conditions during the summer in British Columbia, traveling northward to the Yukon border. In early reports he said that he could detect little change from observations made in this same territory by O. J. Murie in 1935. This Province has been somewhat affected by the dry cycle, but, he says, the drying up of sloughs and marshes was not on the same scale as in the southern parts of the Prairie Provinces. Rainfall was copious in most sections and habitat conditions were good. The ducks had a good hatch and appeared to be maturing large broods. Summing up his studies, Mr. Goldman reports that "the outlook is some better". He returned to the United States early in August to inspect waterfowl breeding grounds in Washington and Oregon before returning to his headquarters at Berkeley, Calif.

Leaves for Arctic Regions.--Leaving his headquarters at Ames, Iowa, about the middle of June, Associate Biologist Charles E. Gillham started north through Alberta on a trip that terminated at Aklavik near the mouth of the Mackenzie River, Northwest Territories. He investigated waterfowl conditions covering much of the territory he visited last year with Luther J. Goldman. By extending his investigations into the Arctic regions he expected to obtain added important information and to witness the beginning of the fall migration.

During July, Mr. Gillham worked north from Fort Chipewyan through Lake Athabaska to Fort Resolution on Great Slave Lake. He reports that stormy weather was almost continuous during the month, and made canoeing hazardous, and that while camped on Big Buffalo River a severe storm had him virtually marooned and two days without food. He finally reached Hay River and boarded the S. S. Distributor enroute down the Mackenzie River to Aklavik.

Visits Newfoundland.--The party assigned to waterfowl investigations in the Maritime Provinces of Canada, consisting of U. S. Game Management Agent John C. S. Boswell and Deputy Agent Ernest R. Atkinson, also made a short visit to Newfoundland. AS a result of their investigations they concluded that waterfowl, particularly black ducks, showed an improvement over 1935. This party returned to Washington on July 10.

Study Waterfowl in the Prairie Provinces.--Operating in Manitoba and eastern Saskatchewan, U. S. Game Management Agent Milton J. Boone and Deputy Agent Edward T. Carter have covered extensive areas and their reports up to the time that drought conditions became acute indicated that an increase in waterfowl was to be expected.

Deputy Agent Robert Bach operated in southern Alberta and Saskatchewan during the summer. Shortly after July 1 he was joined by Agent Webster H. Ransom, who has covered the same area during the past two or three years. Here also early season indications were favorable for a good crop of ducklings, but July reports showed that there was considerable loss from dried up sloughs and pot holes.

Eastern Mourning Dove in Cuba.--On February 16, 1936, a mourning dove carrying band no. 34-308011 was shot near Havana, Cuba. This bird had been banded on July 30, 1935, at Key West, Fla., and its recovery in Cuba probably constitutes the first record for this race in that country, the common mourning dove of Cuba being the West Indian variety, which is not known to be migratory.

Banding Work Shows Continued Growth.--The total number of birds banded during the past fiscal year was 274,695, as compared with 249,829 banded during 1935. The total number of returns received was 18,268. The grand total of banded birds is now well over 2,200,000, with more than 135,953 returns.

Banded Bank Swallow Recovered in Peru.--On June 12, 1932, Prof. J. W. Stack, of Michigan State College, placed band no. C 30270 on a bank swallow at Clear Lake, Ind. This bird (probably dead) was found in a house on the Rio Marañon, near Yquitos, Peru, in June, 1936.

Other interesting returns from banded birds include the following: A yellow-breasted chat, banded June 4, 1934, at Fargo, N. Dak., was captured June 9, 1936, at St. Laurent, Manitoba, Canada; a chimney swift banded September 28, 1928, at Tallahassee, Fla., was found wounded June 23, 1936, at Sebring, Fla.; a mockingbird banded May 26, 1934, at Nashville, Tenn., was killed January 29, 1936, at Fulton, Miss., 176 miles from where banded, an interesting record, as the mockingbird is largely non-migratory in the Southern States; a pintail banded February 21, 1935, at Avery Island, La., and shipped for release to Cambridge, Md., was found dead about May 20, 1936, near Moreland, Saskatchewan, Canada; a mourning dove banded July 27, 1927, at Kansas, Ill., was found dead February 29, 1936, at Clayton, Ala.; a junco banded April 7, 1933, at Lake Forest, Ill., was caught about March 20, 1936, at Keokee, Va.; an Arctic tern banded July 8, 1925, at Tern Island, Chatham, Mass., was trapped and released June 11, 1936, in the same locality; a long-eared owl banded April 27, 1932, at Williamston, Mich., was caught in a trap about February 15, 1936, at Gladstone, Va.; a solitary sandpiper banded May 7, 1935, at Blue Island, Ill., was recovered May 4, 1936, at New Orleans, La.; an evening grosbeak banded January 15, 1934, at Milford, N. H., was killed by a cat November 25, 1935, at McGrath, Minn.; a brown thrasher banded May 4, 1932, at Huntington, L.I., N.Y., was retrapped at the same locality on May 10, 1933, May 18, 1934, May 14, 1935, and May 13, 1936; a brown thrasher banded April 28, 1930, at Lansing, Mich., was retrapped in the same locality on May 21, 1931, June 13, 1932, April 18, 1933, August 2, 1933, May 2, 1934, April 28, 1935, and May 5, 1936; a chimney swift banded October 11, 1928, at Tallahassee, Fla., was found dead May 16, 1936, at Kenbridge, Va.; a double-crested cormorant banded June 27, 1934, in Saguenay County., Quebec, Canada, was captured and released February 18, 1936, at Lake Hancock, Highland City, Fla.; a white pelican banded July 8, 1933, at Bird Island, Clear Lake, Calif., was found dead April 30, 1936, at Ruskin, Nebr.; a ferruginous rough-legged hawk banded July 4, 1933, at Rosebud, Alberta, Canada, was killed April 20, 1936, at Coldwater Creek, Okla.; a western crow banded January 27, 1933, at Norman, Okla., was killed April 27, 1936, near Nipawin, Saskatchewan, Canada; a crow banded in the same locality on February 14, 1936, was shot April 27, 1936, at Wainwright, Alberta, Canada.

Discusses Migration.--Frederick C. Lincoln participated in a discussion of bird migration broadcast under the auspices of Science Service on a network of the Columbia Broadcasting System on November 3.



Fur Resources

Talks to University Women on Furs.—On October 22 Frank G. Ashbrook gave a lecture to 8 students in home economics at the University of Maryland who visited the Washington office. His remarks were confined entirely to North American fur animals and the uses made of their pelts, and were illustrated with an exhibit of dressed furs.

Confer at Bureau of Standards.—Mr. Ashbrook and Chas. E. Kellogg on October 27 attended a conference at the Bureau of Standards to discuss research authorization in connection with the methods of determining the degree of dressing in fur skins. Ralph W. Frey, of the Bureau of Chemistry and Soils also attended. This research is a cooperative undertaking among Government Bureaus and the fur trade for the purpose of obtaining fundamental information as to what constitutes a "raw" and a "dressed" fur skin. An outline of the problems on which research will be conducted and the methods of procedure was agreed to by those attending the conference.

Addresses Fox Farmers' Meeting.—Mr. Kellogg on October 15 and 16 attended the annual meeting at St. Louis, Mo., of a fox breeders' service organization and gave a brief talk on "Sex, Age, and Time of Pelting." He also visited the fur company plant in St. Louis where all the Government's fur seal skins are dressed and dyed, and the research laboratory and experimental farm of a feed company where all types of live-stock, including foxes, are used in feeding experiments. On his return trip to Washington Mr. Kellogg visited fur farms in the vicinity of Omaha, Nebr., and conferred with fur dealers and feed company officials in Chicago. He returned to Washington, October 23.

Rabbits Thrive on Whole Grains.—George S. Templeton, director of the U. S. Rabbit Experiment Station, Fontana, Calif., reports that experimental results show whole grains, both self-fed and hand-fed, to be satisfactory for fryer rabbit production. This system of feeding was developed by the Station and during the first year of the experiment good gains with the young and satisfactory breeding performances of does were obtained.

Study Vitamin A Importance.—The possibility that vitamin A deficiency may cause rabbit enteritis is being investigated at the U. S. Rabbit Experiment Station. A low enteritis mortality occurred in the lots of rabbits fed pelleted plant proteins and choice alfalfa hay and those fed pelleted plant proteins and green barley. It was noted that the does and litters in these lots consumed fewer concentrates and more roughage than is generally eaten by rabbits of a similar age on other rations.

Enteritis mortality has been rather heavy among rabbits fed pelleted cottonseed meal. Cottonseed meal "poisoning" in steers and other cattle has been found to be due to a deficiency of vitamin A in the ration. In the case of steers enteritis symptoms may develop when fed a ration deficient in this vitamin over a long period.

In the experiment with rabbits the enteritis mortality was just about the same in the first litters in three lots, a check lot, and two vitamin A lots. A few of the does in each lot have reached the third litter stage, and there is less infant mortality in the vitamin A lots than in the check lots. Much of the nest box mortality has been caused by enteritis, which in the case of affected rabbits can be diagnosed as soon as they are 10 days of age.

Many Fair Visitors See Rabbit Station.--A large number of rabbit breeders from northern California attended the Los Angeles County Fair during the latter part of October and many of them visited the Rabbit Experiment Station.

Talks at Rotary Luncheon.--Chas F. Bassett, director of the U.S. Fur Animal Experiment Station, Saratoga Springs, N.Y., gave a talk at the regular noonday luncheon of the Mechanicville, N.Y., Rotary Club on October 7. His subject was "The U.S. Fur Animal Experiment Station--What is it and What is it Doing?".

Visit Fur Animal Station.--On Sunday, October 4, 300 persons visited the U. S. Fur Animal Experiment Station largely as the result of a news release on the proposed purchase and improvement of the station by the Government. Many visitors came for specific information on mink and fox raising. By visiting the station fur farmers and prospective fur farmers are able to inspect the equipment and compare the animals that are on different experimental rations.

Annual St. Louis Meeting.--Mr. Ashbrook addressed the meeting of the regional directors and game management agents at St. Louis, Mo., September 16 to 19, and called attention to the dwindling fur supply. He asked the field men to obtain information on the present status of fur animals, particularly the rarer species, as the marten, fisher, otter, and wolverine. He pointed out results of the President's Wildlife Conference held in Washington last winter and also referred to a letter written by Dr. Gabrielson to all State Game and Conservation Commissions requesting them to cooperate with the Bureau in placing a five-year close season on these valuable species.

Visits Fur Farms and Attends Fur Sale.--During the latter part of August and the first week in September, Mr. Ashbrook visited a number of fur farms in Wisconsin and also attended a silver-fox pelt sale at the Fromm farm at Hamburg, Wis., which holds pelt auction sales on the farm. A new building for grading, storing, and selling silver-fox skins has just recently been completed on this farm. It is two stories high, 200 feet long, and 40 feet wide.

Five hundred fur farmers and their families, 40 fur buyers, feed and supply salesmen, professional men, writers, and photographers attended the sale. Prices realized were satisfactory, with full silver pelts averaging about \$75; three-quarter, \$50; and half silver, \$40. On the evening of September 3, a banquet was given jointly at Wausau by the owners of the fox farm and the Wausau Chamber of Commerce. Mr. Ashbrook gave a short talk on fur-farming developments and future possibilities of this industry.

Visits Disease Research Station.--On September 16 Dr. Green of the Lakefield Ranch, Grafton, Wis., took Mr. Ashbrook on an inspection trip of the ranch. On this ranch is the station in which the late Dr. Karl B. Hanson, formerly of the Survey, worked while he was employed by this fox farm. At the time of Mr. Ashbrook's visit about 400 dogs were being kept at the station for blood extraction for making serum; 300 experimental foxes were being kept as patients, and 3,500 foxes had been brought in from various ranches for treatment and study. There also were 75 pairs of breeding foxes being used in experiments on the farm and 10 to 15 ferrets.

Serves as Witness for Bureau.--Mr. Ashbrook went to Deadwood, S. Dak., in July to serve as an expert witness in cooperation with the Division of Land Acquisition in the condemnation proceedings pertaining to the Lacreek Migratory Waterfowl Refuge. Though it might have been helpful to the Bureau in presenting its case, he was not permitted to give testimony as he did not see the muskrat areas in this refuge area before the Government took over the land.

To Improve Fur Animal Experiment Station.--Mr. Ashbrook and Edgar Cope, associate architect of the Migratory Waterfowl Division, spent July 23 and 24 with Chas. F. Bassett, director of the Fur Animal Experiment Station, making a survey of the entire area with a view of developing a more desirable arrangement of the buildings, and planning for the improvement of old structures and erection of new ones. Mr. Cope's final plans for a correlated unit of buildings call for using as many of the rocks on the property as possible. A survey of the property and a topographical study of the land have been made, and construction will start as soon as title has been cleared. An appropriation by Congress makes it possible to purchase the site, which during the past 12 years has been under lease.

Sample Cartons of Rabbit Meat Sent to New York Market.--A dozen boxes of prime fryer rabbit meat produced on the whole grain ration developed at the Rabbit Experiment Station were sent on July 24 as a trial shipment to the New York market by George S. Templeton, director of the station. After being thoroughly frozen and delivered to a steamship company at Los Angeles, cartons of this meat were placed in refrigeration for transportation to New York. These carcasses were remarkably well finished, the fat being well deposited over ribs and tailhead and the kidneys being almost entirely covered. This type of carcass, cut up and properly arranged in a heavily paraffined carton with cellophane window, makes a tempting purchase. The samples were from representative fryers averaging 4.2 pounds of live weight at 8 weeks of age and yielding a dressed percentage of 55.3.

Nail Keg Nest Boxes Developed.--About 50 nest boxes for rabbits have been built from nail kegs by the staff at the Experiment Station. Many have been used there during the last two or three months. The simplest type of construction has proved to be the most satisfactory. A board, 1 by 6 inches in size and fastened to the open end of the keg with three nails, prevents the keg from rolling on the hutch floor and helps to keep the young in the keg. The box is popular with many breeders, particularly as empty nail kegs usually can be obtained at stores for the asking.

Obtains Valuable Information on Fox Farming.--Chas. E. Kellogg left Washington on June 11 on a two weeks trip through the Midwest. Enroute he spent a day with officials of a chain grocery store at Cincinnati, Ohio, discussing their rabbit purchasing and production programs. This company sells 1,300 to 1,400 dressed rabbits weekly, but it estimated that it could sell several times that number if a supply were available. The company has about 400 breeding does. In Chicago Mr. Kellogg discussed a number of recent developments in the rabbit industry with the secretary of the American Rabbit and Cavy Breeders Association and visited a fox farm in that vicinity. He also spent five days at the Nieman fox ranch, at Thiensville, Wis., reviewing its records in order to obtain statistics on various phases



of fox farming. This ranch is the largest in the world. While in this vicinity Mr. Kellogg visited a minkery at Sheboygan, Wis., and also attended a meeting of the Wisconsin Fur Breeders Association, and discussed fur-farming developments with faculty members of the University of Wisconsin and officials of the Wisconsin Conservation Department. On his return trip to Washington Mr. Kellogg delivered an address on June 25 on polygamous mating of foxes before the Pennsylvania Fox and Fur Breeders Association.

Attends Furriers' Convention.--After having the last assortment of cooperative Karakul lamb skins graded in the raw state in New York City, Mr. Ashbrook went to Atlantic City, N. J., where a comprehensive wildlife exhibit of the Bureau was shown June 10 to 17 at the seventh annual International Retail Furriers' convention. Mr. Ashbrook lectured daily before various classes in the public schools on the conservation of fur resources. The students were encouraged to write short essays based on these lectures. Prizes were awarded for the best two essays. Mr. Ashbrook also addressed the convention on fur conservation. The convention passed a resolution commending the Bureau for its work in the conservation of fur resources.

Discusses Experimental Work with Breeders.--Chas F. Bassett, director of the Fur Animal Experiment Station, discussed fur farming problems and methods before the New England Mink and Fur Breeders Association, at Manchester, N. Y., on June 14. He also attended a meeting of the Fur Breeders Association of the State of New York, at Syracuse, on June 27. The associations seem highly appreciative of this public service.

Number of Visitors at Rabbit Station Increase.--Director Templeton writes that the number of visitors at the Rabbit Experiment Station during April, May, June, and July, increased 112 percent over the same period in 1935. With pelt prices holding up remarkably well during the year and with the increase in price of all meats, the rabbit raising industry has been greatly stimulated. In many sections new rabbitries have been established and existing herds enlarged. Inquiries about all phases of the rabbit industry are being made by the visitors and by correspondents from virtually all States.

Shows Coyotes Breed But Once in a Year.--Dr. G. W. D. Hamlett, an agent of the Bureau stationed at the Johns Hopkins University, Baltimore, Md., visited the Washington office on August 13. During the past year he has made exhaustive studies of the reproduction of coyotes, not only from microscopic sections but also from the records available in the Bureau files. Although this work is incomplete, sufficient data have been obtained to establish the fact that coyotes breed but once a year. Dr. Hamlett resigned August 1 and sailed August 15 for South America, where he will continue his studies begun several years ago of the armadillo and other species of mammals under a Guggenheim fellowship.

Visits Rabbit Experiment Station.--Dr. Bell, spent August 14 at the Rabbit Experiment Station, conferring with Director Templeton and reviewing experimental work. He reports that he is pleased with the experimental work in progress there. Paul F. Brunham and his secretary, Rolfe F. Allen, of the Sundries Division of the United States Tariff Commission, Washington, D. C., called at the station on August 18 to obtain information that might have a bearing on tariff problems of the rabbit industry.

Students Get Facts on Fur Farming.--R. A. Johnson, instructor in the State Normal School, Oneonta, N. Y., with a party of 14 summer-school students, visited the Fur Animal Experiment Station on August 15. Information on fur ranching, its possibilities and problems, and the care and management of fur bearers raised commercially was supplied. Mr. Johnson was impressed with the possibilities of this branch of agriculture and plans a return visit with a larger class of regular students.

Howard Kumin of the Bureau of Fisheries, Washington, and his father visited the station on August 26. Mr. Kumin is interested in the ranching of fur bearing animals, particularly foxes.

A mink breeder from western New York inspected the station on August 15 after visiting many ranches in New York and Canada and an experiment station in Canada. This breeder was impressed with the color and quality of the minks at the experiment station and the experimental work. He has been feeding a herd of 75 minks on a ration developed by the experiment station with highly satisfactory results.

Director Bassett reports that the number of registered visitors in August this year was 110 as compared with 76 in August last year. There also were several visitors this year who did not register.

Discuss Experimental Work.--Mr. Kellogg left Washington September 8 and spent several days at the Fur Animal Experiment Station reviewing the progress of the experiments on minks and foxes and discussing with Director Bassett plans for new experimental work. Mr. Kellogg and Mr. Bassett also reviewed the final plans for rearrangement and construction of buildings at the Station. All the minks and some of the foxes were on experimental rations to determine the degree of shedding and their comparative development.

On the trip to the station Mr. Kellogg discussed certain results of a rather extensive research into various factors of silver fox production with officials of several auction companies in New York City. Mr. Bassett and Mr. Kellogg also visited two fox farms and one newly established mink farm in the middle of New York State.

Attends Sacramento Fair.--Director Templeton, of the Rabbit Experiment Station, spent September 9 and 10 at the Sacramento Fair. Members of the Sacramento Rabbit Club had a splendid exhibit of rabbits and seemed to appreciate Mr. Templeton's discussion of the station's experimental program. At the fair Mr. Templeton met executives, members of the State Board of Agriculture, and several men of the College of Agriculture at Davis, Calif.

Resigns.--Miss Jane E. Kehoe, employed as a stenographer at the Fur Animal Experiment Station since 1928, resigned August 22 to accept a secretarial position with the State of New York.

Disease Control

In Washington to Prepare Reports.--Dr. F. D. McKenney, associate veterinarian in the Section of Disease Control, stationed at the U. S. Rabbit Experiment Station, Fontana, Calif., was detailed on June 1 to Washington to prepare reports of his research on diseases of rabbits. He has accumulated considerable information on rabbit diseases in his research work. Library and collaborating workers in Washington have facilitated the preparation of his manuscripts. Papers ready for publication are "Infectious Myxomatosis of Domestic Rabbits", "Hemorrhage Septicemia of Domestic Rabbits", and "Studies of an Epidemic in Domestic Rabbits Due to Pastuerella cuniculicida".

On July 8 Dr. McKenney left Washington for a temporary detail in Florida for the Bureau of Animal Industry to investigate the relationship between the deer and cattle in that State in regard to Texas fever. He cooperated with the local officials of the Bureau of Animal Industry and the Florida Conservation Department to determine suitable methods for handling the deer in an effort to eradicate the disease. Dr. McKenney returned to Washington on August 9.

Woodpecker Makes Pet.--An unfledged downy woodpecker rescued by George A. Hossick of the Section of Game Refuges and Agents and turned over to the Section of Disease Control thrived on a hamburger diet for two months before it was killed in a heavy rainstorm in August. The first day after capture it was necessary to force feed the hamburger. The young woodpecker soon became tame and vociferous in its demand for hamburger. When it became older, Mrs. Deering of the Section of Disease Control, took it home and later released it in her garden, where it would call every hour or so for food. It had been named Wimpy, from a comic strip character also fond of hamburger. With a little coaxing Wimpy would alight on one's shoulder and eat small bits of hamburger from a pair of forceps. The bird also let itself be caught for an occasional bath.

Dissects Fox for Fur Breeders.--In complying with a request from the president of the American National Fox and Fur Breeders Association, Dr. J. E. Shillinger attended the summer school session of the association at Milwaukee, Wis., on June 19. Nearly 300 fox and mink raisers attending watched Dr. Shillinger dissect a fox and heard him explain how to look for signs of various diseases common to foxes. In a discussion on disease control he also answered many questions raised by the fur breeders. On his return trip to Washington, Dr. Shillinger stopped at Syracuse, N.Y., and addressed the Fur Breeders Association of the State of New York at the annual session of its summer school. He spoke on the prevention and control of disease and answered many questions.

Investigates Waterfowl Losses.--During the last few months the Section of Disease Control has received numerous requests from sportsmen, game officials, and fur ranchers for help in controlling diseases among wildlife and fur animals raised commercially. Dr. Shillinger made a trip to the Maryland State Game Farm at Salisbury on August 5, to investigate losses of waterfowl, and diagnosed the disease as botulism, caused by low water levels resulting from drought. He also visited the Black-



water Migratory Waterfowl Refuge at Cambridge, Md., to get more data on certain protozoan parasites appearing in the blood stream of wild ducks at this refuge. On September 2 Dr. Shillinger was called to Oxford, Pa., to investigate an outbreak of disease among quail, and on September 30, he went to Bridgeport, N.J., to investigate the cause of heavy waterfowl losses on the lower Delaware River. When he arrived many dead birds had been washed away by heavy rains, making an extensive investigation impossible. Previous examinations by other persons and a limited investigation by Dr. Shillinger indicated that the ducks had died from botulism. On October 2 Dr. Shillinger left for Maine in complying with a request from a number of fur ranchers for assistance in controlling a serious outbreak of disease among foxes.

Attends Veterinary Meeting.--Dr. Shillinger spent the week of August 10 at Columbus, Ohio, attending the annual meeting of the American Veterinary Medical Association. In the association's program on research Dr. Shillinger presented a paper on "Infectious Diseases of Domestic Rabbits", prepared by him and Dr. McKenney.

Attends Fox Producers Meeting.--Dr. Shillinger attended the annual meeting of the Silver Fox Producers Association at St. Louis, Mo., on October 15 and 16 while on his way to California to supervise the Survey's disease investigation work there.

Lectures on Fur Animal Diseases.--On September 24, Dr. Shillinger lectured on fox and mink diseases at a joint meeting of the Pennsylvania and New York State Fur Breeders Association at Elmira, N. Y. During a postmortem demonstration he pointed out the conditions that should be observed for determining the cause of death.

#### LAND ACQUISITION

Bureau Controls 5,696,558 Acres.--A report compiled by this Division indicates that 5,696,558 acres of land owned by the Government are under full jurisdiction of the Survey. These lands were acquired by purchase, Executive order, gift, exchange, and special acts of Congress. The total cost of lands purchased was \$3,835,438.94. Land on which the Survey has second rights or holds under joint ownership or under lease consists of 3,618,387 acres.

Inspects Refuges.--Mr. Dieffenbach left on June 9 on a field inspection trip of various refuges in Michigan, Minnesota, North Dakota, South Dakota, and Missouri. He returned to Washington July 1.

To Study Wildlife Values of Floodway.--Paul T. Kreager, who has been stationed at San Antonio, Tex., was called to Washington on August 15 to receive instructions on methods to be followed in determining wildlife values of lands being acquired by the War Department in the Mississippi Floodway. Other bureaus cooperating in this undertaking are Agricultural Engineering, Agricultural Economics, and the Forest

Service. Each bureau will handle the appraisal of elements coming within its field of activities. The work is expected to require about six months.

Preliminary Use of Refuge Obtained.--In cooperation with the University of Maine preliminary use and occupancy permits of the Moosehorn Migratory Waterfowl Refuge in Maine have been obtained from vendors to permit the undertaking of wildlife studies pending the vesting of title in the United States. This refuge, which is being acquired primarily as a sanctuary for woodcock, has been visited by several departmental employees, who wished to familiarize themselves with it.

Named Land Negotiator.--Carl B. Vogen, who is handling the acquisition responsibilities of the Bureau at Minot, N. Dak., has been appointed from a civil-service register as an assistant land negotiator. One of the duties of the office at Minot is to satisfy landowners who complain of title vesting activities moving too slowly. Some optioning of land is still being conducted from this office, which also cooperates with legal agencies in performing title curative tasks.

Condemnation Hearing Held.--During July a condemnation hearing was held in the Federal Court at Deadwood, S. Dak., to dispose of disputed acquisition cases pertaining to the Lacreek Migratory Waterfowl Refuge in South Dakota. Frank G. Ashbrook was present to offer testimony as an expert on fur resources.

Experiment Station Land to be Purchased.--Title examination is well under way for the purchase by the Government of approximately 20 acres of land at Saratoga Springs, N.Y., on which the U.S. Fur Animal Experiment Station is located. It is hoped to have the conveyance of the land completed by the end of the year. Funds for the purchase of the land were made available by an act of Congress.

Appointed.--The following appointments have been recently made in this Division: Raymond Moss, assistant engineering aide; John H. Freifield, assistant engineering aide; Robert H. DeGrange, assistant engineering draftsman; Dallas H. Waltman, junior engineering draftsman; and James A. McWhorter, assistant engineering draftsman.

Transferred.--Harold W. Hicks has been transferred to St. Louis, Mo., where he will be chief of Region 1. He fills the vacancy caused by the transfer of Carey H. Bennett to the Division of Migratory Waterfowl.

Albert J. Rissman has been transferred from St. Louis, Mo., to San Antonio, Tex., where he fills the vacancy caused by the transfer of William T. Krummes to the Division of Migratory Waterfowl.

Miss Gladys M. Wilcox has been transferred from the War Department to this Division to fill the vacancy caused by the resignation of Mrs. Creola M. Wilson.

Miss Edith T. Williams has been transferred from the Federal Trade Commission to fill the vacancy caused by the resignation of Mrs. Mary Hough.

Detailed to Washington.--Alastair D. Campbell, of the Ogden, Utah, office, and David V. Black, of the St. Louis, Mo., office, have been detailed to the Washington office for approximately 60 days.

Make Surveys.--Arthur A. Riemer recently inspected surveying operations on the Okefenokee Refuge in Georgia and the St. Marks Refuge in Florida. Earlier in the summer he made an inspection trip of surveying work on projects in Texas, Utah, Wyoming, Idaho, South Dakota, Missouri, and Georgia.

The survey party under the direction of Marion E. Phillips, assistant cadastral engineer, is working on the Moosehorn area in Maine. Mr. Phillips recently completed a survey of the U. S. Fur Animal Experiment Station.

Oswald E. Recroft, assistant cadastral engineer, and his party are surveying on the Okefenokee Refuge in Georgia.

Clair L. Howard, of the St. Louis office, has just completed a detail in the Washington office.

James W. Whitehead, Jr., engineering aide, is making boundary surveys on the Bombay Hook project in Delaware.

Glen E. Eidson has accepted appointment as junior engineering draftsman.

Walter Reser, formerly of the Solicitor's Office, has been transferred to the Division as an apprentice draftsman.

Miss Virginia M. Freitas announces a change of name to Mrs. Virginia F. Whitt.

#### MIGRATORY WATERFOWL

Small Refuges Established in North Dakota.--Fifty-seven small refuges for migratory waterfowl and water conservation have been established in North Dakota during the past year on more than 90,000 acres of land turned over to the Government through perpetual easements signed by farmers and other landowners. Twenty-five such refuges have been developed during the past year by the Survey with funds from the Works Progress Administration, and 1,800 men are now at work improving the 32 other refuges. Farmers helped to advance the easement-refuge program in North Dakota by granting the easements gratuitously. Out of 93,391 acres obtained for this type of refuge development it was necessary to buy less than 1,500 acres. To facilitate this program the State legislature enacted laws authorizing and directing the 32 counties in which the easement areas are located to exempt from taxation all inundated refuge land, and to waive collection of fees for recording and filing the necessary documents covering the easement transactions. Sites for refuges were selected with the view of developing them into individual flood and soil-erosion control units also. In most instances submarginal or low-grade lands were chosen as sites for the water reservoirs. Construction work was performed with relief labor, with the exception of a small staff of supervisory personnel. Persons in need of relief also are doing the construction work on the 32 refuges now under development. Picnic grounds or bathing beaches are being provided for the public on a number of the easement refuges. In developing these refuges the Survey has followed the general plan of improving the shallow water areas and marsh lands for waterfowl, reserving a part of the water area for livestock, and, whenever possible, providing public recreational facilities at the deep-water parts near the impoundment dams.

An allotment of \$286,240 from the Works Progress Administration was used in completing the development of 25 refuges and in making essential improvements on 7 others. Last summer the Works Progress Administration in its emergency drought-relief program allotted an additional \$600,000 to the Survey for the restoration and improvement of refuges and water conservation in several States. Of this allotment \$353,548



is being used for developing 25 new easement refuges and 7 others on which work had already been done--32 in all--in North Dakota, and in improving the Sullys Hill Game Preserve. The remainder of the allotment is being used in developing wildlife and water conservation projects in South Dakota, Nebraska, Montana, Oklahoma, Louisiana, and Wisconsin. At present these projects are providing work for 2,800 farmers and other persons in need of relief. The refuges, their location, and acreages were listed in a press statement released on October 19.

Meets With Drought Committee.--John N. Ball, associate refuge manager stationed at Mitchell, S. Dak., reports that on August 22 with M. O. Steen and A. F. Miller he met at Rapid City, S. Dak., with a drought committee, which included representatives of planning boards from North Dakota, South Dakota, Minnesota, Iowa, Montana, Wyoming, and Nebraska. This committee conferred with the President's drought committee consisting of Morris L. Cook, Rural Electrification Administrator, R. G. Tugwell, H. H. Bennett, John O. Page, Frederick H. Fowler, Col. Richard C. Moore, and Col. F. C. Harrington. A long-term drought program, presented by the planning boards to the President's drought committee, consisted of the following ten points: (1) A broad program of water conservation, which would include preservation of natural cover and retention of flood and freshet waters; (2) classification of land, initiated with State and local cooperation, by the Federal Government, possibly followed by zoning certain lands for specific uses; (3) measures to increase the proportion of land operated by owners; (4) recognition of pest control as a regional and national problem demanding constant concerted action by both States and the Nation; (5) approval of a "National Land Policy" recognizing the right of each State fully to develop its agricultural resources; (6) fitting of drought and other emergency expenditures to a long-time program of corrective measures; (7) a broad and systematic movement of forestation development; (8) establishment of county planning boards or committees throughout the region to integrate their programs with regional, State, and national policies; (9) unification of relief, rehabilitation, and development programs through State planning boards; and (10) recognition of the importance of past and future research by State and Federal agencies.

Broadcasts About Bear River Refuge.--George E. Mushbach, superintendent of the Bear River Migratory Bird Refuge, Utah, discussed the development and value of the refuge during a broadcast by Station KSL, Salt Lake City, on June 2.

#### GAME MANAGEMENT

Agents Meet.--U. S. Game Management Agents from all parts of the United States convened for their second meeting September 16 to 19, at St. Louis, Mo. In addition to regular enforcement men, chiefs of almost every division of the Survey, regional directors, and visitors were present to discuss field problems and Bureau policies on enforcement activities.

Mr. Young welcomed staff members and visitors, outlined objectives of meeting, and then introduced Dr. Gabrielson. The chief of the Survey urged that every effort be made to acquaint the public further with the endeavors of the Biological Survey in perpetuating waterfowl through the building and maintenance of refuges. He indicated satisfaction with the past activities of the game agents and other Bureau members and

stressed that all activity is toward the coordination of functions and smoothness in operation of the Survey as a unified group.

Scheduled talks and presentation of papers covering practically every activity of the enforcement section, interspersed with floor discussions, accomplished much in clarifying matters. Regional directors and game agents, for the first time, had the opportunity of group meetings and extra sessions that ended to their mutual satisfaction. Several representatives of the Migratory Waterfowl and Land Acquisition Divisions were interested visitors and made much of the opportunity to become better acquainted with game agents and their methods of operation.

Highlights of the conference included the "Yellow Dog" initiation ceremonies. Interesting side trips of educational nature were taken by several parties at the close of day sessions. The conference was closed with a banquet presided over by F. P. Callaghan and at which time First Assistant United States Attorney Herbert H. Freer, gave an entertaining talk and pledged his support in the prosecution of violators in the St. Louis district.

The conference accomplished much in bringing the members of the field staff into closer contact with their neighboring officers, and affording a better understanding of conditions for promulgating policies of the Survey.

Talk on Western Farm and Home Hour.--Explaining the objectives and program of the Biological Survey, members of the field force in the West have been taking part in broadcasts of the Western Farm and Home Hour. F. E. Garlough, director of the Control Methods Research Laboratory, discussed "Protection and Control of Wildlife" on July 6. In a series of three talks on July 13, July 20, and August 17, Hugh Worcester, game management agent in California, spoke on "Wildlife Management in Idaho", "Factors Controlling the Game Supply in Northwestern States", and "The 1936 Duck Regulations". Three talks prepared by Wm. Rush, regional director, "Wildlife Values", "The Desert Game Range", and "Roadside Menageries" were broadcast on September 2, September 22, and October 19, respectively, the second being delivered by E. E. Horn, biologist of the Division of Wildlife Research, stationed at Berkeley, Calif. Mr. Rush also took part in a radio dialogue with William L. Finley of the American Nature Association on the Western Farm and Home Hour on September 28. Their subject was "Saving the Ducks."

#### Game Management Agents and Game Preserves

Transferred to Migratory Waterfowl Division.--Chester A. Leichhardt, former senior administrative assistant in the Division of Game Management, was transferred on August 1 to the Division of Migratory Waterfowl. Milton J. Furness, game management agent at Portland, Oreg., has been detailed to the Washington office pending formal transfer to the position held by Mr. Leichhardt.

New Districts Organized.--With appropriations increased for the protection of migratory birds, new game management districts are being set up for Southern California, Southwestern Texas, Iowa, Nebraska, Arkansas, and Massachusetts. Official stations for these new districts will be at Los Angeles, Corpus Christi, Des Moines, Omaha, Stuttgart, and Falmouth.

Two Deputy Agents Promoted.--Deputy Game Management Agents John M. Martin and Milton H. Boone have been promoted to the position of game management agent. Mr. Martin is in charge of the Illinois District with headquarters at Peoria, and Mr. Boone is in charge of the Oklahoma District with official station at Oklahoma City.

Transferred to Falmouth, Mass.--Game Management Agent Lee F. Brackett of Portland, Me., was transferred to Falmouth, Mass., August 1. His new game district will include Massachusetts, Rhode Island, Connecticut, and Long Island in New York.

New Agents Appointed.--Clyde Licking, formerly employed as a senior biological aide on the Shelterbelt project, was appointed as a game management agent on September 1, with headquarters at Omaha, Nebr. Walter B. Mebane and Samuel T. Miller, Jr., deputy game management agents, also were named game management agents, effective September 1. Mr. Mebane's headquarters will be at Stuttgart, Ark., and Mr. Miller will be stationed at Portland, Maine. Mr. Miller fills the vacancy created by the transfer of Game Management Agent Brackett to West Falmouth, Mass. Appointments yet to be made will include game management agents at Corpus Christi, Texas; Los Angeles, Calif., Des Moines, Iowa, and Albuquerque, N. Mex.

Observations on Ducks.--Game Management Agent B. J. Shaver informed the Survey in July that Forest Service employees reported more ducks on the Chippewa National Forest, Minn., than for several years. In covering about 400 miles in northern Montana, Game Management Agent W. H. Ransom reported during July that he saw very little water anywhere and only two broods of ducklings.

To Dispose of Surplus Big-Game Animals.--To avoid overgrazing of range on big-game preserves administered by the Survey surplus animals in the herds each year are offered for sale. The following animals were offered this year: At the National Bison Range, Mont., 110 buffalo; Niobrara Game Preserve, Nebr., 25 buffalo and 12 elk; Wichita Mountains Wildlife Refuge, Okla., 50 buffalo, 30 elk, and 30 Texas longhorns; and Sullys Hill Game Preserve, N. Dak., 3 buffalo, 15 elk, and 2 white-tailed deer bucks. Animals not sold are obtainable by State, county, city, or municipal zoos, parks, or game preserves, or private institutions for propagation or exhibition, by paying the cost of capture, crating, and transportation.

Surplus live animals captured, crated in individual crates, and delivered to transportation company or purchaser's truck, were offered for sale at the following prices: Mature buffalo not less than 2 years of age, \$70 each; buffalo under 2 years of age, \$60 each; mature elk not less than 2 years of age \$60 each; elk under 2 years of age, \$55 each; white-tailed deer, \$50 each.

Surplus live animals, corralled and delivered to purchaser's truck or crate at the capturing corral on the refuge: Mature buffalo not less than 2 years of age, \$60 each; buffalo under two years of age, \$50 each; mature elk not less than 2 years of age, \$50 each; elk under 2 years of age, \$45; white-tailed deer, \$40 each.



Animals butchered, dressed, prepared for shipment, and delivered to transportation company or purchaser's truck, including carcass, hide, and head: Mature buffalo not less than 2 years of age, \$60 each; buffalo under 2 years of age \$50; mature elk not less than 2 years of age, \$50 each; elk under 2 years of age, \$45 each.

Animals butchered on the open range, but removed and dressed by the purchaser: Mature buffalo not less than 2 years of age, \$55 each; buffalo under two years of age, \$45 each; mature elk not less than 2 years of age, \$45; elk under 2 years of age, \$40 each.

Report Activities at Wichita.--The number of visitors to the Wichita Mountains Wildlife Refuge, Okla., writing or carving their names on Government property has been a source of much trouble to Superintendent Harry H. French and other local employees of the Survey. The superintendent obtained the addresses of persons known to be guilty of writing on signs or carving on benches and tables and wrote to them asking that they return to the refuge and repair the damage or face a court trial. This action brought results.

Under the WPA program, 40 to 70 men daily have been employed in completing a highway to the summit of Mount Scott, a peak that rises 2,400 feet from the plains to form southwestern Oklahoma's highest mountain. The crews are blasting exposed granite rocks from the overhanging walls and making the roadway safe so that visitors may enjoy the magnificent view of the surrounding region afforded from this peak.

Early fall rains dispelled the drought that gripped Oklahoma during the summer, but the aftermath will have a detrimental effect on the wildlife for many months. The late spring frosts partly ruined the acorn and other mast crops, and the heat and drought completed the destruction. Food supplies are being accumulated for an extensive feeding program that will be necessary this winter to insure survival of the deer, wild turkeys, quail, prairie chickens, and other wildlife.

Finding food hard to obtain in the drought-stricken region of southwestern Oklahoma, the plains coyote invaded the refuge and killed a number of white-tailed deer and wild turkeys. The killers are known to have been migrants, their toe-nails being long and soft from foraging on soft ground. Claws of coyotes within the Wichita Refuge are worn down from running over the rocky slopes and boulder-strewn hillsides. During a two months period Federal Hunter Andy Campbell captured 20 of the marauders.

The drought dried out an old gravel pit near Cache, Okla., off the border of the refuge in mid-September and because of this some of the lakes within the refuge were enriched on September 15 with 3,500 more game fish seined from the pool in the pit by Game Warden L. E. Crawford, of Comanche County, and assistants from the fish hatchery at Medicine Park. Bass, bream, and crappie were transferred to Lake Quanah Parker within the refuge. On October 22 another shipment of game fish was received from the Bureau of Fisheries hatchery at Tishomingo, Okla., and planted in various lakes. The number received totaled 26,600, all fingerlings, and included large-mouthed bass, crappie, green sunfish, and bream.

New Assistant Superintendent at Wichita.--Ernest J. Greenwalt was transferred on July 16 from the Charles Sheldon Antelope Refuge, Nev., to the Wichita Mountains

Wildlife Refuge in Oklahoma to be assistant superintendent.

Transfer Texas Longhorns.--Three Texas longhorn bulls were brought by Superintendent French from Mexico to the Wichita Mountains Wildlife Refuge in May in order to introduce new blood in the herd on that refuge. Six longhorns in the Wichita herd were transferred by truck to Niobrara Game Preserve, Valentine, Nebr., as a nucleus herd for that game preserve.

Speaks Before Conservation Leagues.--"Some Practical Aspects of Waterfowl Management" was the subject of an address by Director D. H. Janzen given before the Jackson County Conservation League at Jackson, Mich., on October 13, and also before the Ingham County Conservation League, Lansing, Mich., on October 28. Lantern slides showing migrations and breeding ranges were used to illustrate the groundwork on which current waterfowl hunting regulations are based. The motion pictures, "Our Wildlife Resources" and "Duck Sickness" also were shown.

Hay Harvested at the Elk Refuge.--The hay harvest began at the Elk Refuge, Jackson, Wyo., on July 13 and was not completed until September 17, as a number of rains delayed haying operations. An excellent crop was harvested. A total of 2,523 tons were cut and stacked and with the 2,173 tons left from last winter there are now on hand 4,696 tons of hay and also 228 tons of cottonseed cake for feeding elk next winter. With a good growth of forage on the pasture and range lands, and the feed on hand, the Survey is now better prepared to care for the elk than in any previous year. During the summer new equipment was acquired for raising, harvesting, and caring for hay and grain, including mowing machines, side delivery rakes, baling machines, a threshing machine, a grain drill, and ditching machines. Ten horses were purchased through the Forest Service.

Secretary's Son Makes Bird Survey.--Robert Wallace, now a student at Iowa State College, visited the Elk Refuge during the summer and made a bird survey on the refuge. Observations made by him included 84 species of birds on the area, among them being a woodcock, possibly the farthest west that this species has been reported.

Build Fence at the Elk Refuge.--A small detachment of C.C.C. men from a Forest Service side camp began the construction of a woven-wire fence in the project to build 8½ miles of this fencing for turning the elk onto the refuge. The C.C.C. men have completed one mile of this fence.

Improvements at the Bison Range.--The program for the seventh period of the C.C.C. camp operations at the National Bison Range, Mont., was completed nearly 100 percent by the end of September. A 6-car garage building was completed, approximately 10 miles of new road were constructed, both bridges over Mission Creek were rebuilt, a camp ground was developed, borrow pits filled, 29 miles of road maintained and graveled, 16,000 acres covered in rodent-control operations, 35 acres cleared to reduce the fire hazard, 13½ miles of fire guards reconstructed and oiled, buildings painted, and various other improvements made. An exhibition pasture also has been constructed with W.P.A. funds.

Treat Mountain Sheep at Bison Range.--Mountain sheep at the National Bison Range have been driven into corrals and injected with a mixed infection bacterin in order to prevent, if possible, losses that have occurred in the band from Pasteurella pneumonia. This season's lambs are reported to be in fine condition and it is hoped that all on hand can be saved. Several have been lost, however, and as no trace of them can be found, it is thought that they may have been destroyed by predatory animals or eagles.

Fire in the Bison Range Region.--On July 17 the Flathead Indian Agency requested that twenty-five C.C.C. men employed on projects at the Bison Range be furnished to help fight a forest fire in Mission Canyon east of St. Ignatius, Mont., in the region of the National Bison Range. The men sent to assist in fire fighting did good work in this emergency and returned to their camp the following evening after the fire had been brought under control.

Motion Pictures Taken of Buffalo.--A crew of a large motion-picture organization arrived at the National Bison Range, on August 8 and was taken out on the range to photograph the buffalo. A large part of the herd was driven to the part of the range known as the south fork of Pauline Canyon, where satisfactory pictures were obtained without unnecessary disturbance of the animals. About 3,000 feet of film were taken. The picture in which these shots will be used will be entitled "The Plainsman", starring Gary Cooper, and is to be released about December 1.

Informs Duck Hunters.--Two hours on the speaker's platform answering questions by misinformed duck hunters was the experience of Regional Director D. H. Janzen on September 24 at a special meeting of the Macomb Wildlife Association at Mount Clemens, Mich., which is located on Lake St. Clair, an important waterfowl concentration area. Using many slides showing maps of migration routes and reduced breeding grounds Mr. Janzen was able to satisfy much of the criticism directed against the 1936 hunting regulations, especially that dealing with the prohibition of the taking of redhead and canvasback ducks. Lake St. Clair is one of the main resting and feeding grounds for practically the entire Atlantic flight of redheads and canvasbacks, and Mr. Janzen found that many local hunters do not appreciate the growing scarcity of these species.

Visitors at the National Bison Range.--Glen A. Smith, assistant regional director of the Forest Service, Missoula, Mont., accompanied by J. K. Dwinelle, of the Missoula office, Dr. H. L. Schantz, chief, Division of Wildlife Management, and Walt L. Dutton, chief, Division of Range Management, both of the Washington Office of the Forest Service, visited the Bison Range, on August 2 and were conducted over the range. They expressed themselves as well pleased with conditions. On August 3 O. C. Bradeen, in charge of the Procurement Supply Division of the Missoula Office of the Forest Service, accompanied by Hon. William R. Thom, representative in Congress from the Seventh Ohio District and member of the Appropriations Committee, were conducted over the range and saw white-tailed deer, mule deer, a goodly portion of the buffalo herd, and about 20 head of mountain sheep. Mr. Thom commented favorably on the condition of the area and appeared greatly impressed with the C.C.C. camp set-up, and voiced the opinion that the projects under way were well worth while.



On August 2, when Frank Grocm and T. P. Street, employees of the C.C.C. camp, were conducting visitors in cars over the range, one of the cars that Mr. Street was conducting took fire. Through the efforts of Mr. Street and the occupants of the car the fire was extinguished, saving a spread of the fire to the range. This probably would have been disastrous, since the grass and timber on the area were very dry. Mr. Street's hands were burned but his injuries were not serious.

An unusually large number of persons visited the National Bison Range during the latter part of the fiscal year 1936.

The big-game animals on the Bison Range are generally in excellent condition. There are 76 buffalo calves in the herd, and 12 mountain sheep lambs, 35 elk calves, 60 mule deer fawns, and 9 white-tailed deer fawns have been noted.

Improvements at Niobrara Preserve.--An important improvement at Niobrara Game Preserve, Nebr., has been the construction of a bridge over the Niobrara River, affording access from the southern part of the preserve to the north pasture over a short drive east of headquarters. The bridge was built entirely with inexperienced C.C.C. labor. Members of the Bureau of Public Roads visited the preserve from time to time and gave suggestions regarding construction and checked plans and specifications. The C.C.C. boys and their supervisory personnel deserve much credit for their hard work and success in building this structure. A 125-foot tower with a platform on top has been completed at the headquarters site. An office and museum building also has been completed. This is a very attractive building and in it specimens of birds, mammals, reptiles, and insects, as well as fossils of prehistoric bones of mammals found on the preserve, will be displayed.

Doe Gives Birth to Triplets.--A white-tailed doe kept in a small pasture at the Niobrara Game Preserve, Nebr., gave birth to triplets in the spring. This is an interesting case as it is believed to be unusual for these deer to bear triplets.

Antelope and Deer Acquired for Game Preserve.--For several years the Bureau has planned to establish a herd of antelope in a new pasture in the southern part of the Niobrara Game Preserve. On May 27 Geno A. Amundson, in charge of the preserve, and Mrs. Amundson, went to Wyoming to obtain antelope fawns. The best time to capture the fawns on the range is in the spring shortly after they have been born. Mr. and Mrs. Amundson returned to the preserve on June 3 with 9 fawns, two of which died several days afterward. Later in June they brought 10 more fawns, which had been contributed by the State Antelope Refuge near Buffalo, S. Dak. Four mule deer fawns contributed by the Custer State Game Preserve also were brought to the preserve. On June 15 an airplane brought 15 more young antelope from Pitchfork, Wyo., making a total of 34 delivered to the preserve. Of this number 11 have survived. The fawns were first fed with a bottle and those not in good condition received a special feeding, including lactic acid, syrup, and scalded milk. Two holding and feeding pens were built for them in the south pasture. The small band of antelope that has been in the exhibition pasture near the preserve's headquarters for some years has been reduced to one doe and four bucks.

One of the mule deer fawns died shortly after reaching the preserve and another accidentally broke a leg. After having the leg placed in splints by a veterinarian it recovered. The young mule deer are now on the pasture with the other deer after having been kept in the yard near the headquarters during the summer and early fall.

While gathering the fawns in Wyoming, Mr. Amundson observed an interesting incident. He located a doe antelope in a ravine and started to maneuver his car to get as close to her as possible and mark the spot of her bed and then look for the fawns. While Mr. and Mrs. Amundson were still a quarter of a mile away the doe stood up and watched them. In looking through his field glasses Mr. Amundson noticed a coyote between him and the antelope. When he looked back into the ravine the antelope was gone, and upon locating her again she was chasing the coyote. She continued the chase until both were out of sight. Apparently the antelope could run about twice as fast as the coyote as every once in a while she would start to jump on the coyote and make it run in a zig-zag fashion to keep away from her feet. Mr. and Mrs. Amundson were unable to locate any fawns from this antelope.

New Superintendent at Charles Sheldon Refuge.--Edward R. Sans, formerly in charge of predatory animal and rodent control work in Nevada, was transferred on July 1 from Reno, Nev., to the Charles Sheldon Antelope Refuge to be superintendent in place of Ernest J. Greenwalt.

Drought Cycle at Antelope Refuge Broken.--A drought cycle that prevailed for more than a decade over the northern Nevada section in which the Charles Sheldon Antelope Refuge is located was broken last winter with the largest seasonal precipitation (13 inches) in a score of years. The normal rainfall of the region is approximately 8.5 inches. As a result the refuge area has been greatly benefited, springs have been replenished, forage has been increased, and wildlife food and cover have been greatly improved.

The condition of the antelope appears to be satisfactory, and mule deer have been steadily increasing and are in fine condition. The numbers of sage grouse on the refuge and throughout the adjacent region had been decreased, but increases of these birds in some sections of Nevada have been reported and several large broods of chicks have been seen on the refuge. With a good supply of moisture and numerous improvements by the Civilian Conservation Corps camps the Charles Sheldon Refuge has shown its greatest single year's advancement since its establishment.

W.P.A. Employees Work on Sullys Hill.--Since August 10, 20 to 40 W.P.A. men have done much work on the Sullys Hill Game Preserve, N. Dak., building roads, cutting brush, and constructing a small fence across a corner of the game pasture. This work will be of lasting benefit for the convenience of visitors and the prevention of fire.

Addresses Sportsmen.--Regional Director Janzen represented the Bureau at the annual meeting of the Northern Michigan Sportsmen's Association on August 17. This organization has been a strong supporter of the Seney Migratory Waterfowl Refuge, and during the evening banquet Mr. Janzen spoke briefly on the development work in progress at that refuge, concluding with a short description of the Survey's nationwide refuge program.

Additional Notes on Sullys Hill Game Preserve.--During July, hot winds from the south and west blew over the Sullys Hill region in North Dakota and greatly damaged crops. In some places the crops were dried up and many gardens were ruined by hot winds. At the Sullys Hill Game Preserve plenty of hay has been put up to feed the animals during the winter season. As the dry weather continued vigilance was maintained to prevent danger of fire. Steel piling placed along the lower side of the small lake in the picnic grounds at Sullys Hill Preserve, checked the lowering of the water level in that lake.

During July, there were 4,065 visitors with 880 cars at Sullys Hill Preserve, and during the fiscal year ended June 30, a total of 15,787 persons, with 3,137 cars. There are 7 calves in the buffalo herd, the elk herd has been increased by 8, and it is estimated that there are 4 deer fawns on the preserve.

Dufresne Receives New Post.--Following the appointment of Hugh W. Terhune as superintendent of the White River Migratory Waterfowl Refuge, Frank Dufresne was appointed, effective July 1, as executive officer of the Alaska Game Commission. Mr. Dufresne's long association with the Alaska Game Commission and his wide knowledge of wildlife conditions fit him for this position in Alaska. The new executive officer was first employed by the Bureau in the Territory as an Alaska fur warden in 1920. After the establishment of the Alaska Game Commission in 1925, he was employed by the Commission as a game warden. He held this position until 1935 when he was named assistant executive officer.

Arctic Winter Patrol.--Present plans of the Alaska Game Commission contemplate initiating winter patrol of the Bering Sea and Arctic Ocean coastlines, which has been needed badly. Grenold Collins, one of the youngest and most resourceful wardens of the Alaska Game Commission, plans to leave Nome, November 1, and travel with the winter dogteam mail carrier northward around Seward Peninsula to Kotzebue, where he will meet Harlan Gubser, who is now engaged in wolf investigations in that region. From Kotzebue, Warden Collins will probably obtain transportation with another mail carrier, who maintains dogteam mail service to Point Barrow. He may continue eastward as far as Cape Halkett before beginning his homeward journey. The entire journey from Nome and return may require 5 months and the only contact the Commission will have with Warden Collins will be by wireless at Teller, Deering, Kotzebue, and Barrow.

In addition to his regular patrol activities, Warden Collins has been directed to gather data for a detailed and comprehensive report on general wildlife conditions in the Arctic as compared with former years, particularly on wolf invasion of the reindeer herds, red fox invasion of the white fox range along the beaches, and migratory wild-fowl nesting conditions.

Aleutian Islands Patrolled.--The patrol vessel Brown Bear, under Captain John Sellvold, completed an extensive patrol of the Aleutian Island Bird Refuge on September 11. This is the first time in the history of the Alaska Game Commission that one of its vessels has reached Attu, the westernmost point of the Aleutians. Swinging back through the Aleutians to Unalaska, the Brown Bear proceeded to Nunivak Island. A visit was also made to Nelson Island to investigate an apparently reliable report that black brant were nesting in that vicinity. Enroute south in mid-August, the vessel stopped at Dillingham to pick up Warden Sarber and a \$12,000 load of



contraband furs and firearms that he had seized during the year. During the expedition it was possible to accomplish considerable enforcement work. The party making the trip on the Brown Bear to the Aleutians included C. S. Williams and O. J. Murie of the Division of Wildlife Research, who made exhaustive studies of the wildlife of the refuge. The Alaska Game Commission was represented by Alaska Game Warden Jewell.

Duck Hunters Checked.--With the aid of the Alaskan press the Alaska Game Commission conducted a comprehensive publicity campaign covering the waterfowl hunting regulations. Early morning and evening automobile patrols of the waterfowl flats in the vicinity of Juneau were made by members of the executive office of the Commission, and on the opening day more than 150 hunters were checked for licenses, ducks stamps, and plugged guns. Ten hunters were arrested on the opening day, after which the regulations were closely observed.

Game Law Enforced.--During the period July 1 to September 30, 1936, reports of the Alaska Game Commission showed that 426 beaver skins were forfeited by 41 persons, fines aggregating \$826 assessed, and 1 jail sentence of 6 months imposed. Other forfeitures included 1 marten, 1 deer, 2 bears, 4 swan skins, and 9 firearms. In addition, 3 persons charged with assaulting officers were fined a total of \$1,500 and sentenced to jail for one year.

Musk Oxen Transferred to Nunivak.--The entire herd of 27 musk oxen at Fairbanks was safely transferred to Nunivak Island in the Bering Sea between July 4 and 20. This transfer was made after it was learned that four animals previously transferred to the island came through the winter in excellent shape. The island is believed suitable for the development of the herd under semiwild conditions. In addition to a check-up of the herd by Bureau and Game Commission men who arrived at Nunivak on the patrol vessel Brown Bear in August, the Commission received a message dated October 2, from Captain Lystad of the Bureau of Indian Affairs vessel Boxer in which Paul Ivanoff at Cape Etolin reported that all musk oxen were in good condition.

Shows Bureau Pictures.--In August moving pictures were shown through the office of Regional Director Leo L. Laythe as follows: "Beavers at Home" and "The Cougar Hunt" at the Denver Chamber of Commerce, 3 showings with a total audience of 86 adults; "Routing Rodent Robbers" at the Uintah Basin Industrial Convention in Utah before an audience of 1,500; "Beavers at Home" and "Our Wildlife Resources" before a Latter Day Saints church audience of 65 persons in Denver; and "The Cougar Hunt", "Our Wildlife Resources", and "Porcupine Control" before an audience of 150 persons at the Community Church, Palmer Lake, Colo. Half the audience last named consisted of Kansas and Oklahoma tourists. All these groups showed a keen interest in the films and asked many questions on wildlife subjects.

On October 7 and 14 the Forest Service Rangers Training School at the Horse Creek C.C.C. Camp, near Pactola, S. Dak., saw the motion pictures "Our Wildlife Resources", "Beavers at Home", "The Cougar Hunt", "Routing Rodent Robbers", and "Porcupine Control". Thirty-two rangers and 6 instructors and guests brought the audience total to an average of 80 for each film shown at the school.

On October 22 Mr. Laythe talked before the Home Garden Club of Denver on "Wildlife Conservation in Colorado". The films "Beavers at Home" and "Our Wildlife Resources" also were shown.

On October 29 under the auspices of the Denver U. S. D. A. Club Mr. Laythe delivered a 5 minute radio talk over station KOA. His subject included a short discussion of this year's waterfowl hunting regulations, and an appeal to farmers for cooperation in conservation.

Cooperates with Alaska Game Commission.--Acting on a wired request from the Alaska Game Commission, Game Management Agent Milton J. Furness recently seized a quantity of canned venison illegally shipped from Sitka, Alaska. The violator was fined \$100 and sentenced to serve a jail sentence of 60 days.

Fined for Shooting Ducks After Hours.--A defendant arraigned in Federal Court for the Eastern District of Michigan on April 7, charged with killing wild ducks after 4 p.m., entered a plea of guilty and was required to pay a fine of \$100.

Four Fined at Toledo.--Four Migratory Bird Treaty Act cases were disposed of in Federal court at Toledo, Ohio, on April 20 when the defendants pleaded guilty. Three, involved in the taking of ducks by means of bait and over live decoys, were fined \$25, \$50, and \$100, respectively, and ordered to pay costs. The other case related to killing ducks in close season and was terminated by a fine of \$50 and costs.

Shot Ducks in Close Season.--For shooting two ducks in close season, a defendant tried by a jury in Federal Court at Owensboro, Ky., on May 4, was found guilty and fined \$100.

Fined For Selling Ducks.--Arraigned in Federal court at Peoria, Ill., on May 6 for selling ducks an offender upon plea of guilty was fined \$25. Fines of \$20 each were imposed in the same court on May 29 against 2 persons charged with killing ducks in close season.

Killed Two Geese.--For killing two geese on May 7, at Sparks, Nev., a defendant when arraigned on May 22 in Federal court at Reno, Nev., was assessed a fine of \$100.

11 Fined in Louisiana.--Eleven defendants appeared in Federal Court at Opelousas, La., on May 25 and entered pleas of guilty to various violations of the Migratory Bird Treaty Act. The cases were disposed of as follows: 1 case, \$25 fine for hunting without stamp and with gun holding more than 3 shells; 4 cases, \$10 fine each on first count and 3 years' probation on second count for killing ducks in close season; 3 cases, \$25 fine each on first count and 3 years' probation on second count for hunting ducks after dark and without stamp; 1 case \$10 fine for killing a heron; 1 case, \$10 fine on first count and 3 years' probation on second count for killing robins; 1 case, \$10 fine on first count and 3 years' probation on second count for possessing 2 meadowlarks.

Violated Lacey Act.--Arraigned in Federal Court for the Middle District of Tennessee on May 25, a defendant charged with transporting skins of fur-bearing animals contrary to the provisions of the Lacey Act was fined \$25 upon pleading guilty.

13 Arrested for Duck Selling.--A drive against duck sellers in the vicinity of Catahoula Lake in Louisiana, resulted in the arrest in February of 13 of the most active bootleggers of wildlife and their arraignment before a United States Commissioner. The first case of the group to be disposed of was terminated in Federal Court at Opelousas, La., May 25 by a plea of guilty. For the sale of 3 ducks the defendant was sentenced to 90 days in jail and on the second count of the criminal information, was placed on probation for 3 years.

Hunted in Close Season.--Five defendants arraigned in Federal Court for the Northern Division of the Eastern District of Missouri on May 25 entered pleas of guilty to hunting wild ducks in close season. They were fined \$15 each.

Lacked Duck Stamp.--For hunting without a migratory bird hunting stamp, a defendant pleaded guilty in Federal Court at Cheyenne, Wyo., and was fined \$20 on May 29.

Arrested 12 Post-Season Violators.--An agent received information in May regarding the hunting of wild waterfowl early in April by persons in North Dakota. He learned that 12 individuals were supposed to have been on the hunt, but none were known to him. Later, the 12 men were located and taken into State Court. There they pleaded guilty and were each fined \$25 and costs.

Hunted Over Bait.--Two defendants arraigned at Alexandria, Va., on June 1, charged with hunting waterfowl over bait and without a hunting stamp, pleaded guilty and were each given a suspended sentence of 2 years.

Restaurant Operator Pleads Guilty.--A restaurant operator arraigned in Federal Court at Fergus Falls, Minn., on June 1, on charges of possessing wild ducks in close season and selling wild ducks, pleaded guilty. He was fined \$50, or 30 days in jail on each of the two counts.

Fined For Killing Plovers.--Pleading guilty to a charge of killing plovers, a defendant in Federal Court at Houston, Tex., on June 6 was fined \$10.

Sentenced for Transporting Quail.--Charged with unlawfully transporting 296 live quail from Collins, Miss., to Sumter County, Ala., two defendants arraigned in Federal Court at Tuscaloosa, Ala., on June 16 pleaded guilty. They were sentenced to serve 90 days in jail.

#### Importations

Inspector of Foreign Birds and Mammals Appointed.--Edmund Heller, director of the Fleishhacker Zoo in San Francisco, Calif., was appointed inspector of foreign birds and mammals at the Port of San Francisco, on July 14, to fill the vacancy caused



by the death of Harry S. Swarth in October 1935, and to substitute for Mrs. M. E. Davidson, the senior inspector at San Francisco, who will be absent on an extended scientific expedition in South America for the California Academy of Sciences. Mr. Heller was a member of the Theodore Roosevelt expedition to East Africa in 1909 and 1910 and an assistant naturalist in this Bureau's biological survey of Alaska in 1900. Before becoming director of the Fleishhacker Zoo he had served as director of the Milwaukee Zoological Garden. He is the author of a number of books on big game of Africa, life history of game animals, and on birds, reptiles, and fishes.

Miss Margaret W. Wythe, of the Museum of Vertebrate Zoology, Berkely, Calif., who has been under appointment as inspector of foreign birds and mammals at San Francisco, since May 31, 1924, resigned as inspector on July 11, on account of pressure of her work at the museum.

Interesting Birds Imported.—Among the more interesting birds recently imported were 2 bare-necked Cotingas (Gymnoderus foetidus), from Brazil, 3 olive pitylus (Pitylus viridis), and 2 Cayenne leistes (Leistes guianensis) from British Guiana.

Inspector Fisher Resigns.—William H. Fisher, inspector of foreign birds and mammals, at the Port of Baltimore, Md., resigned on August 7, due to pressure of his regular work in the stock exchange. Mr. Fisher's appointment as inspector under the Bureau dates back to December 1, 1911.

#### Predator and Rodent Control

Work Combined in Texas District.—On October 1, District Agent C. R. Landon, with headquarters at San Antonio, Tex., assumed direction of both the predator and the rodent control projects in the Texas district. This conforms with the Survey's policy of placing the responsibility of both predator and rodent control projects under one agent in each district. The placing of the Texas district under one district agent completes the application of this policy in the Western States, which was inaugurated about 10 years ago.

L. C. Whitehead, formerly in charge of the rodent control project in Texas, will act as principal assistant to Mr. Landon. J. M. Hill, Jr., who has been Mr. Whitehead's principal assistant in the San Antonio office, will transfer as soon as practicable to College Station, Tex., where he will act as contact and liaison officer with the Texas Agricultural and Mechanical College and the Extension Service, which cooperate with the Survey in rodent control. The transfer of Mr. Hill will afford a closer contact with the authorities at this college than has been possible in the past.

Personnel Changes Made.—Ben E. Foster, who has had charge of the Survey's predator and rodent control activities in Arizona since January 16, 1931, was transferred on September 16 to the Washington district to act as an assistant district agent. Mr. Foster recently requested that he be relieved of administrative duties in the Arizona district due to his physical condition.

Everett M. Mercer has been appointed district agent to take charge of the Arizona district. Mr. Mercer served as an assistant in Arizona from 1922 to 1929, when he resigned to enter private business. In 1933 he returned to the Government service, acting as project manager for the Indian Service, and in February 1935

accepted a position with the Shelterbelt Project, with headquarters at Mitchell, S. Dak. Since the discontinuance of the Shelterbelt project, Mr. Mercer has served as an assistant in the Arizona district.

Several other transfers of field personnel in the Predator and Rodent Control Section have been made. George E. Holman was transferred on July 1 from Salt Lake City, Utah, to Reno, Nev., to take charge of the predator and rodent control work in that State. Mr. Holman succeeded E. R. Sans, who transferred on the same date to the Charles Sheldon Antelope Refuge to serve as refuge superintendent.

Holger G. Hansen sailed on June 25 for Honolulu, Hawaii, to take charge of rodent control activities in the Territory, in cooperation with the Agricultural Extension Service of the University of Hawaii and the Territorial Public Health Service. Mr. Hansen's address is now in care of the Hawaii Agricultural Experiment Station, Honolulu, Hawaii.

Harlan H. Gubser sailed from Seattle, Wash., on August 1 for Juneau, Alaska, to take charge of a predatory-animal control project in Alaska. In cooperation with the Reindeer Service and the Bureau of Indian Affairs of the Department of Interior, the Survey will try to induce the native trappers to improve their trapping technique. Mr. Gubser's address is in care of the Alaska Game Commission, Juneau, Alaska. He is now located at Kotzebue and will remain in the northwestern part of the Territory until spring.

E. C. Cates, who has served many years as assistant district agent in the Montana district with headquarters at Bozeman, transferred on August 1 to Albuquerque, N. Mex., to act as assistant district agent in that State.

Harold Haecker, who has had charge of the Shelterbelt rodent control program since its inception, transferred to the California district on August 15, to act as an assistant district agent.

The discontinuance of the Shelterbelt project on July 1 necessitated the transfer of the junior district agents in the various States in the Shelterbelt area. Eugene F. Grand transferred from Jamestown, N. Dak., to Bozeman, Mont., to fill the vacancy created by Mr. Cates's transfer to New Mexico. Noble E. Buell was assigned to the Wyoming-Nebraska district and is now assisting Mr. Hamm in the farm forestry rodent-control program. Robert Rowe, formerly stationed at Pratt, Kans., was assigned to the South Dakota district as junior district agent. Clyde Licking, who had headquarters at Kearney, Nebr., under the Shelterbelt project, has been appointed game management agent to assist Regional Director Laythe in migratory waterfowl enforcement work. Herbert R. Wells, formerly stationed at Woodward, Okla., was transferred to the Division of Migratory Waterfowl, with headquarters at Sand Lake Camp, Columbia, S. Dak. David Wood, former clerk in the Shelterbelt office at Lincoln, Nebr., sailed on August 1 from Seattle, Wash., to Juneau, Alaska, to assume duties of junior administrative assistant with the Alaska Game Commission.

George Girard, formerly junior district agent under an agent appointment in the Wyoming district, received a junior biologist appointment with the Division of Migratory Waterfowl and has transferred from Cheyenne, Wyo., to Ronon, Mont.

A. L. Rasmussen, junior district agent in Washington, resigned effective August 1. Mr. Rasmussen had been employed with the Survey's Predator Rodent Control Section since July 16, 1920, and his work did much to bring about the control of predators and rodents.

Coati Trapped in New Mexico.--John C. Gatlin, district agent in New Mexico, reports that Hunter W. C. Echols trapped a coati last spring in Pine Canyon in southern Hidalgo County. About three years ago Mr. Gatlin requested Mr. Echols to obtain a specimen of a coati for the Survey's collection. These animals are difficult to trap and are seldom caught in wolf trap sets, which accounts for Mr. Echols's not being able to obtain one sooner. Southern Hidalgo County lies on the extreme northern edge of the migration route of the coatis that come from Mexico. At certain seasons of the year the stock trails in this area are covered with coati tracks.

Crippled Coyotes Destructive.--In spite of their handicaps crippled coyotes often cause heavy livestock losses to western farmers and ranchers. District Agent Hamm reports that Hunter L. F. Burgess on May 7 found a den of pups in Park County, Wyo., and shot the mother. According to the rancher on whose range this den was found, the mother had denned in the same vicinity for several years and had taken a heavy toll of his sheep and lambs each year. Hunter Burgess examined this coyote and found that her front incisor teeth were gone and that the canine teeth were worn almost to the gums. Two of her feet also were missing, but, in spite of this condition, she was still able to kill sheep.

Hunter C. E. Lee took an old female coyote at her den in Natrona County, Wyo., that had three peg-legs, one of which was so short that she could not use it at all. At first she tried to escape, but she could not outrun Mr. Lee, though she was ready to fight. After this coyote was killed her den was found in a shallow wash in a hole about 3 feet deep. The den contained 8 pups.

Helps Experiment Station.--During July the Survey received a request from the Bureau of Animal Industry for assistance in protecting valuable sheep at the Range Livestock Experiment Station, Miles City, Mont., against attacks of coyotes. Eleven sheep that were being used in experiments had been killed. On July 17, District Agent R. E. Bateman informed the Survey that he had already conferred with the superintendent of the Experiment Station and had assigned an experienced hunter to this range. Appreciation of this prompt service was expressed by the Bureau of Animal Industry.

Beaver Transplanted in Oregon.--District Agent Roy Fugate, of the Oregon district, reports that in a period of 20 days Hunter "Pud" Long working in Malheur County, Oreg., transplanted 16 beavers that were damaging irrigation ditches and canals. Hunter Long transplanted them to places where they will be of economic benefit. Plans for extensive live beaver transplanting in cooperation with the Forest Service and the Oregon State Game Commission are being formulated. The Oregon Game Commission has purchased 30 live beaver traps for the project.

Many Predators Killed in Texas.--District Agent C. R. Landon reports that 18,733 coyotes, 3,340 bobcats, 113 mountain lions, and 13 ocelots, a total of 22,199 predatory animals, were taken in Webb County, Tex., from May 1930 to December 1935--a period of 5 years and 8 months. Webb County has an area of 2,060,160 acres. This



catch of predators amounts to 1 animal for each 92.8 acres of land, or a take of 1 predatory animal for each 525.8 acres annually.

Doves Interrupt Rodent Control Work.--Before transferring to the Washington district, Agent Foster reported that rodent-control projects on the Apache and Gila Indian Reservations in Arizona were temporarily abandoned during part of May, when large flights of doves settled in the vicinity of the control projects. The doves came into these areas by the thousands and at times as many as 500 were counted on an acre of land. They appeared tired and somewhat starved from their long migration. It was thought best to discontinue rodent-control operations until the doves resumed their flight northward. The birds, however, did not do so until late in the month. Control work was not halted on the areas where the doves did not appear. On some of the other areas it was necessary to suspend operations for only a few days.

Turkeys Destroyed by Coyotes.--District Agent C. R. Landon reports that 13 farmers living in an area of about 15 square miles in the Stockdale community, about 40 miles south of San Antonio, Tex., lost a total of 311 turkeys in two months last spring from depredations of coyotes. Mr. Landon obtained this information from signed statements by the farmers. At the time the turkeys were killed they were valued at \$1.75 each. Hunter J. P. Galloway was assigned to this territory and after he had taken 11 coyotes the losses ceased.

Texas is a leading turkey-producing State and ships approximately 1,600 carloads to market annually. These turkeys come from a wide area in south-central, central, north-central, and western Texas. Practically all of these sections are still infested to some degree with Texas red wolves or coyotes. When in one small community within an area of 15 square miles, coyotes cause a loss of more than \$500 in 2 months to the turkey raisers, the losses throughout the State are certain to run into thousands of dollars annually.

Predators Reappear in Alabama.--Andy Ray, predatory animal hunter at Magnolia, Tex., was transferred during August to Hurtsboro, Ala., where he has conducted control work in cooperation with the Department of Conservation of Game, Fish, and Sea Foods of Alabama. Predator animals appeared in the vicinity of Hurtsboro several years ago and local control was instituted, but apparently not all the animals were taken. In the last few years they have increased and have killed livestock and game. The first animals taken by Hunter Ray were wolves. Coyotes had been blamed for livestock losses.

Black Widow Spiders Suspected.--Assistant District Agent George W. Kerr, of the Montana district, reports that in central Montana prairie dogs have disappeared in many communities where no control work has been in progress. Mr. Kerr found many prairie dog burrows in this area covered with spider webs. Upon his touching the webs black widow spiders would appear. Mr. Kerr was unable to learn whether the spiders actually caused the disappearance of the prairie dogs. On some of the areas still inhabited by prairie dogs he found a number of spider webs but no spiders. The Bureau of Entomology and Plant Quarantine reports that black widow spiders are more abundant in southwestern United States than in the northern regions. This Bureau, however, has not received any reports from the Southwest of prairie dogs being killed by these spiders. Field employees making observations similar to that of Mr. Kerr are urged to forward the information to the Survey.

Summon "Wolf Lieutenant."--An Associated Press article from Periquex, France, gives an interesting account of the Municipal Council of the village of Bilhac voting a reward for the killing of an animal supposed to be a wolf and states that the "Wolf Lieutenant" of the district has been summoned to the forest to direct the hunt. It reports that France has 1,100 "wolf lieutenants"--officers charged with protecting farmers against depredations by wild boars, badgers, weasels, otters, crows, and foxes. The title goes back to the Middle Ages, and now that the wolves in France have been reduced to 40, all kept in preserves, it is largely honorary. The "wolf lieutenant" is expected to keep a pack of hounds at his own expense and bear the costs of the hunts, at which he wears a jacket of horizon blue and a gold-braided cap.

Mean Coyote Killed.--District Agent A. S. Hamm reports that Hunter Brewster, of Meeteetse, Wyo., killed a coyote last spring that would eat from the hind quarters of ewes and then let the animals go. This coyote was responsible for the death of 8 ewes within 10 days on a farm near Meeteetse. The sheep had been so severely injured that it was necessary to kill them. Before Mr. Brewster was able to reach the farm the coyote had been seen eating a sheep and was shot at several times. Later in the day her den of pups was found. The mother coyote, however, would not appear near the den. Mr. Brewster finally caught a glimpse of her at a great distance, took a chance shot, and won.

"Intelligent" Coyote Taken in Arizona.--Mr. Foster, while serving as district agent in Arizona, reported that Hunter William Casto killed an "intelligent" coyote in the Bowie district of Arizona. Casto was trailing a trapped animal and was unable to gain distance. Later he managed to catch up with the trapped coyote, which was carrying the drag hook of the trap in its mouth and was moving along at a good rate of speed.

Bobcats Delivered to National Zoo.--Two young bobcat kittens, one male and one female, were shipped to the Survey last summer by District Agent T. B. Murray, of Boise, Idaho. These kittens were presented to the National Zoological Park at Washington.

Crows Get Young Wood Ducks.--A report from Fort Belvoir, Va., to Frank Jarvis, biological aide in the office of Regional Director James Silver, showed that 19 young wood ducks were destroyed there this summer by a flock of crows. The witness said that she was watching the mother duck lead her young into the water in the Potomac River for the first time when the crows appeared. The young had been hatched out in a nest on the side of a steep bank about 500 feet from the shore, and during the nesting period she had made special efforts to see that the duck was not disturbed.

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## TO THE MEMBERS OF THE BIOLOGICAL SURVEY, GREETINGS:

LOOKING BACK OVER A YEAR, often clouded with disappointments, the personnel of the Biological Survey should feel a glow of pride in the work accomplished and a touch of the real holiday spirit for the great advance achieved in the cause of conservation and restoration of the wildlife resources.

All of you, by your conscientious efforts and genuine enthusiasm for your part of the job, are entitled to a share of the credit for what has been accomplished.

There is still much to do, and I am sure that you are eager to go into another year of the same kind of effort.

I am taking this opportunity to express both my personal and my official appreciation of your efforts and to extend to you best wishes for a Happy Christmas and a Greater and Better New Year.

*Ira N. Gabrielson*

## GENERAL NOTES

Extension Service Helps Wildlife Program.--Through a recent cooperative agreement with the Extension Service, it will be possible now for the Survey to offer greater and more direct assistance to farmers and others interested in wildlife management and restoration, it was announced in a press statement issued on December 10. I. T. Bode, formerly conservationist with the Survey, has been appointed the first wildlife specialist under the Extension Service. He will cooperate with the Survey and State Extension Services in working out ways and means for making available information obtained by the Survey in its work of National wildlife administration.

Mr. Bode has been actively engaged in the organization of the cooperative wildlife research, demonstration, and educational projects, under the Division of Wildlife Research, at nine land-grant colleges. He will continue to keep in close touch with these research units and other research of the Survey in order to supply extension workers and others with information on new developments in wildlife management.



Addresses Audubon Society.--Chief Gabrielson gave an illustrated talk on "Progress of the Migratory Waterfowl Restoration Program" at the annual convention of the National Association of Audubon Societies at New York City, October 23 to 27. Dr. Clarence Cottam, Frederick C. Lincoln, Dr. W. S. Bourn, and Charles E. Gillham also attended. Dr. Cottam gave an illustrated lecture on "The Effect of Drainage on Animal Life," and Dr. Bourn spoke on "The Effect of Drainage on Food and Cover Plants." Officials of the Soil Conservation Service, Forest Service, Extension Service, and other Government agencies, and organizations interested in wildlife, were also represented at the convention.

From November 4 to 11, the Chief was in Georgia and Florida, where he inspected the Savannah River Migratory Bird Refuge, the Okefenokee refuge area, and the St. Marks Migratory Bird Refuge. He spent November 19 and 20, at Centreville, Md., conferring with members of the Upper Eastern Shore Conservation Association. Accompanied by Dr. Cottam, the Chief left Washington on December 2, to inspect waterfowl food conditions in North Carolina, South Carolina, and Georgia. On this trip they planned to make a survey of the eelgrass situation along the coast of North Carolina, and to visit the refuges at Lake Mattamuskeet, Cape Romain, and Savannah River.

Talks to Maryland Conservationists.--Dr. Gabrielson addressed the members of the Maryland State Game and Fish Protective Association in Baltimore on December 14, discussing the problems of waterfowl restoration from the sportsman's viewpoint.

Tells D. C. Izaak Waltons of Restoration Work.--"On Our Way to Wildlife Restoration" was the title of an address by Mr. Henderson at a meeting of the local chapter of the Izaak Walton League of America in Washington, D. C., on November 12. After "pointing with pride to accomplishments", Mr. Henderson struck a sobering note with the declaration that "the fact is that we have waited so long that what excites us now is only a beginning in the work that we shall have to accomplish if wildlife restoration becomes a reality in the United States."

Early in December Mr. Henderson attended the annual meeting of the New York State Conservationists Council at Syracuse. He explained the program of the Bureau for the restoration of waterfowl breeding grounds, and discussed the cooperative research and demonstration program of the Bureau that is underway at 9 land-grant colleges.

Restricts Deputy Commissions.--Beginning January 1, no appointments as U. S. Deputy game wardens will be made except in cases where it is definitely shown that there is a special reason for the appointment, according to Chief Gabrielson. State law-enforcement officers recommended by State game departments, regional directors, or game managements, however, will be given commissions.

The large number of persons holding commissions has brought about a situation involving considerable work in the Washington and field offices. Many men with commissions have assisted the Survey in bringing about better law enforcement, but it is felt that in many cases that just as much could be accomplished without the commissions.

## ADMINISTRATION

Memoranda to Field Offices Issued.--The following memoranda to field offices have been issued in the "Administrative Field Office" (Admin. F. O.) series:

- No. 132. Appointment of U. S. Deputy Game Wardens. (November 14.)
- No. 133. Contracts for service-station deliveries of gasoline and lubricating oil. (November 27.)
- No. 134. Changes in Procurement Division Contracts. (November 28.)
- No. 135. Observance of instructions in administrative memoranda. (November 30.)
- No. 100. Amendment No. 2. (November 30.)

Appointment Ends.--The temporary appointment of Noel Biersteker, employed in the Bureau as associate naval architect since June 18, 1936, was terminated on November 9.

## PUBLIC RELATIONS

Conservation Day Broadcasts Feature Furs.--Continuing the Friday Farm and Home Hour Broadcasts on the work of the Biological Survey, Howard Zahniser discussed "Conserving and Developing our Fur Resources" on Friday, November 20. "Improving fur-farming methods, promoting the restoration of fur bearers to areas once taken from them, and encouraging wise and adequate trapping regulations--these," he said, "are the combined problem of preventing the extermination of our marvelous wild fur bearers and at the same time providing a supply of furs." On December 11, Mr. Zahniser joined with Miss Ruth Van Deman, of the Bureau of Home Economics, in a radio discussion of furs and fur-animal conservation from the point of view of the consumer. In addition to discussing trade names and other facts for consumers, they talked about conservation and fur farming, pointing out that "everyone who is interested in the future of our fur animals, whether as a purchaser, a fur-trader, or a wildlife conservationist, should realize the needs for a wise management of our fur resources."

Visits Indiana Game Preserve.--On November 2, while on annual leave, Arthur W. Susott visited the Indiana State Game Preserve near Medaryville, observing numerous waterfowl. The northern part of this refuge joins the Kankakee river territory, once a favorite waterfowl haunt. Hundreds of upland game birds are being raised at the preserve for stocking various areas in the State. Mr. Susott also conferred with a number of newspaper editors in Indiana and Ohio, and found them greatly interested in the Survey's activities.

Book by Sheldon Published.--"Tranquillity", a collection of Col. H. P. Sheldon's New England yarns and out-door tales touching on various aspects of sportsmanship and conservation, has recently been published in a limited de luxe edition. In his acknowledgements Colonel Sheldon includes a word of thanks for the editorial assistance of Mrs. Louis G. Prior, of the Survey's Editorial Section.

Makes Local Broadcast on "Duck Hunting."--Speaking under the auspices of the Rod and Stream Department of the Washington (D. C.) Evening Star, Howard Zahniser on November 27, discussed "Duck Hunting in 1936" for the radio audience of Station WMAL. With post-Thanksgiving suggestions that "good appetites and the thrills that come in the marshes and linger in the memory for a long time are, after all, the best 'trophies' of any hunting expedition," Mr. Zahniser outlined the hunting regulations and made an appeal for self-restraint on the part of hunters. "To most sportsmen and to thousands of nonhunters," he said, "the deepest interest in our wildfowl is the subtle and intangible interest that we call esthetic, and the need for a reduced kill is so great that hunters who wish to see their sport last through the years might well impose additional restraints on their hunting."

Attends Conference on Broadcasting.--On December 10 and 11, Mr. Zahniser attended sessions of the First National Conference on Educational Broadcasting, held in Washington, D. C., December 10 to 12. Sponsored by 18 organizations, the conference was held in cooperation with the United States Office of Education and the Federal Communications Commission. Among the special sections was one on "The Effect of Broadcasting on Rural Life," conducted by Morse Salisbury, Chief of the Department's radio staff. Other specific aspects of educational broadcasting were discussed in special sections, and prominent speakers discussed outstanding problems in general sessions.

Official Publications, copies of which may be obtained from the Division of Public Relations, have been issued as follows:

- Officials and organizations concerned with wildlife protection, 1936. Compiled by Frank G. Grimes, Administrative Assistant, Division of Public Relations. Miscellaneous Publication No. 244, 16 pp. Oct. 1936. Received Oct. 12.
- Report of the Chief of the Bureau of Biological Survey, 1936. By I. N. Gabrielson. Annual Report, 68 pp. Received Dec. 9.
- Game management on the farm. By J. T. Darling, formerly Chief of Bureau, H. F. Sheldon, Chief, Division of Public Relations, and I. N. Gabrielson, Chief of Bureau. Farmers' Bulletin No. 1759, 22 pp. Oct. 1936. Received Nov. 27.
- Results from breeding rabbits that are suckling young. By Chas. E. Kellogg, Biologist, Section of Fur Resources, Division of Wildlife Research. Circular No. 410, 3 pp. Oct. 1936. Received Oct. 23.
- Groups of plants valuable for wildlife utilization and erosion control. By W. L. McAtee, Technical Adviser and Research Specialist, Office of the Chief. Circular No. 412, 12 pp. Oct. 1936. Received Nov. 20.
- Abstract of fur laws, 1936-37. Compiled by Frank G. Grimes, Administrative Assistant, Division of Public Relations. Mimeographed Leaflet BS-68, 32 pp. Nov. 1936. Received Nov. 16.
- Fur farming in perspective. By F. G. Ashbrook, in Charge, Section of Fur Resources, Division of Wildlife Research. Mimeographed Leaflet BS-69, 4 pp. Oct. 1936. Received Nov. 10.



Wildlife in land planning. By W. L. McAtee, Technical Adviser and Research Specialist, Office of the Chief. Mimeographed Leaflet 3S-71, 6 pp. Nov. 1936. Received Dec. 3.

Outside Publications.--Articles by members of the Survey appearing in outside publications have been reported as follows:

- Gabrielson, I. N. Natives of the Pacific Coast. Card. Chron. Amer. 40: 317-318. Nov. 1936.
- Girard, G. L. Old Tom, the sage cock, issues a challenge to action. Outdoor Amer. 1 (11): 4-6, illus. Sept. 1936.
- Howell, A.H. A revision of the American Arctic hares. Jour. Mammal. 17: 315-337, illus. Nov. 14, 1936.
- Jewett, S. G. Bird notes from Harney County, Oregon, during May 1934. Murrelet 17 (2-3): 41-47. Nov. 14, 1936.
- Lincoln, F. C. Some land bird recoveries from Mexico. Bird Banding 7: 170. Oct. 1936.
- Some recoveries of water birds from Latin America. Bird Banding 7: 139-149. Oct. 1936.
- Birds fly north and south, but which way is home? Sci. News Letter 30: 308. Nov. 14, 1936.
- McAtee, W. L. The postulated resemblance of natural to artificial selection. Ohio Jour. Sci. 36: 242-252. Sept. 1936.
- The role of fitness in evolution. Ohio Nat. 36: 237-241. Sept. 1936.
- Moore, A.W. Improvements in live trapping. Jour. Mammal. 17: 372-374, illus. Nov. 1936.
- Schantz, V.S. An unusual specimen of red wolf. Jour. Mammal. 17: 415. Nov. 1936.
- Sheldon, H.P. Guns and game; Our locusts; Dame Jorrock's canary; grouse; wildlife administration; woodcock reports; and an epistle. Sportsman 20 (5): 84. Nov. 1936.
- Snillinger, J.E. Government research on diseases of fur animals. Vet. Med. 31: 508-509, illus. Dec. 1936.
- Taylor, W.P. The principle of diversification in the wildlife field. Sci. 84 (2181): 350-351. Oct. 16, 1936.
- Zahniser, Howard. In December--Whittier. Nature Mag. 28: 327. Dec. 1936.

Press and Radio Information and Addresses, copies of which (chiefly in mimeograph) may be obtained from the Division of Public Relations, have been issued as follows:

- Fear of thallium danger to plants from control unfounded, scientists find. Press statement 735-37. Released Nov. 10.
- Emergency Conservation work. (ECW release). Press statement. Released Nov. 21.
- Five erosion control measures aid wildlife on many farms. (Soil Conservation release) Press statement. Released Nov. 23.
- Farm game management is urged for future sport and bigger farm income. Press statement 668-37. Released Nov. 27.
- Emergency Conservation work. (ECW release). Press statement. Released Dec. 4.
- Requiling of wildlife hinges on use of land. Press statement 858-37. Released Dec. 9.

Extension Service joins in new wildlife program. Press statement 881-37. Released Dec. 10.

Duck hunting rules. Radio release 4806. Farm Flashes, Nov. 18.

Birds' food habits. Radio release 4869. Farm Flashes, Dec. 4.

Trees to fit birds. Radio release. Farm Flashes, Dec. 5.

Birds as farm help. Radio release. Farm Flashes, Dec. 9.

Mink farming costs. Radio release. Farm Flashes, Dec. 10.

Rabbit self-feeder. Radio release 4890. Farm Flashes, Dec. 11.

Fur farming future. Radio release. Farm Flashes, Dec. 12.

Silver in fox furs. Radio release. Farm Flashes, Dec. 14.

Conserving and developing our fur resources. Radio talk by Howard Zahniser, in Charge, Current and Visual Information. Conservation Day Program, National Farm and Home Hour, Nov. 20.

The consumer asks for facts on furs. Radio dialogue between Miss Ruth Van Deman, Bureau of Home Economics, and Howard Zahniser, Bureau of Biological Survey, Conservation Day Program, National Farm and Home Hour, Dec. 11.

#### WILDLIFE RESEARCH

Inspect New England Areas.--Dr. Bell, Dr. H. H. T. Jackson, J. Paul Miller, and Leo K. Couch spent November 1 to 17 in the New England States inspecting wildlife conditions and the research projects that are underway or proposed. Their first stop was at the Northeast Forest Experiment Station, Yale University, where they met Dr. M. Westveld, acting director of the station, P. W. Stickel, L. H. Reineke, and L. Markle. At Hartford, Conn., they conferred with Arthur L. Clark, superintendent, Connecticut State Board of Fisheries and Game, and Dr. Paul D. Dalke, in charge of the cooperative wildlife research unit at Connecticut State College, Storrs, Conn. Prof. E. A. Moss, Dr. F. F. English, and Dr. E. N. Jorgenson, president of the college, were also interviewed at Storrs, and the Lebanon game management area was inspected. At Amherst, Mass., President Hugh P. Baker, Dr. Robt. P. Holsworth, dean of the Forestry School, Prof. H. E. Warfel, Dr. R. E. Trippensee and others of the Massachusetts Agricultural College honored the party with a luncheon after which Dr. Bell, Dr. Jackson, and Mr. Couch talked briefly on the research activities of the Bureau. John Palmer, State nurseryman, who is experimenting with shrub and tree growing for improving wildlife food and cover, was visited at the State Nursery. On arriving at Concord, N. H., the party conferred with John H. Foster, state forester, L. N. Watson, assistant state forester, and Walter H. Tripp, in charge of State ECW camps. The Pillsbury State Forest and Game Preserve was inspected and the experimental work checked. Plans for future work were also made. From Laconia, N. H., headquarters for the White Mountain National Forest, Victor S. Jensen, director of experimental work, took the party <sup>over</sup> this area. Going eastward to Augusta, Maine, the Survey representatives conferred with George J. Stobie, commissioner of Inland Fisheries and Game; C. M. Aldous, leader of the cooperative wildlife research unit at the University of Maine at Orono; and Gustav Swanson, assistant to Mr. Aldous. An inspection trip was made over the Moosehorn

Refuge area near Calais, Maine. A conference with Prof. Demeritt, Mr. Aldous, Mr. Swanson and Dr. A. A. Hauck, president of the University, was also held. Returning to the White Mountain Forest, the party found Supervisor C. L. Graham meeting with 25 Forest Service and Forest Experiment Station officials. Dr. Bell explained the research program of the Survey to the group and Mr. Couch told of the relationships of forest improvement and silvicultural work to wildlife. A general discussion was held on silvicultural practices and their effects on wildlife food, cover and nesting sites. Dr. Westveld, of the Northeast Forest Experiment Station, explained the timber cuttings and experiments in cultural practices in connection with a field trip to the Cherry Valley area. At Montpelier, Vt., Dr. Russell P. Hunter, of the State Fish and Game Commission, and H. O. Trask, staff officer of the Green Mountain Forest, were consulted on the E. C. W. programs on Federal and State forests, stream and lake surveys, game census, game food plantings, road development, and beaver problems. On a field trip over parts of the Central Unit of the Green Mountain Forest, timber cultural work and the proposed game management area near Danby, Vt., were inspected. A stop was made at the U. S. Fur Experiment Station, Saratoga Springs, N. Y., where C. E. Bassett is in charge. Dr. Jackson, Mr. Miller and Mr. Couch then left for Washington, D. C. Dr. Bell left the party at this point, going to Boston, where he visited the forest and wildlife exhibit at Harvard University, before returning to Washington.

Cooperate in Science Service Broadcasts.---Frederick C. Lincoln and Frank G. Ashbrook have each recently joined with Watson Davis, of Science Service, in network broadcasts over the Columbia Broadcasting System. On November 3, in a dialogue entitled "South with the Birds", Mr. Lincoln discussed with Mr. Davis interesting facts on bird migration. On December 1 Mr. Ashbrook discussed "American Furs" with Mr. Davis. Continuities for the broadcasts were edited by Miss Emily Davis, of Science Service.

### Wildlife Surveys

Area for Research Set Aside.---Dr. Paul D. Dalke, leader of the cooperative wildlife research unit at Connecticut State College at Storrs, reports that an area of approximately 1,500 acres near the college has been surveyed for making a seasonal census of grouse. A cover map is being made of the area so the birds after the censuses are completed may be located by cover types. No management studies are contemplated on this area as a number of the 20 landowners would not care to have their woods disturbed. This area, however, will serve as an excellent laboratory for classes in game management. Students in forest zoology and in field and laboratory technic made a partial census of the area early in October. Student help has been used to paint the census lines laid out on the area. The time required for this work is credited to the wildlife research program as a participation item from the Forestry Department.

Measure and Weigh Deer.--- Research activity during the early autumn months at the cooperative wildlife research unit under the leadership of Dr. D. L. Rasmussen, at Logan, Utah, has been devoted chiefly to obtaining information on deer in the Cache National Forest. Advanced students in the wildlife management work, stationed



at three checking stations, were directed by Dr. Rasmussen and J. L. Sevy in making careful records of weights and measurements and collecting information on expenditures of the hunters. During October more than 2,000 hunters were counted at the checking stations, and accurate weights and measurements of more than 400 buck deer were obtained.

Automobiles Kill Game Birds.-- Arthur S. Einarsen, leader of the cooperative wildlife research unit at Corvallis, Oreg., has found that automobiles traveling at high rates of speed on highways are responsible for the death of many immature and mature game birds. Most of the birds were killed in specific areas. Through the improvement of such areas Mr. Einarsen believes it may be possible to reduce the number of bird fatalities.

Birds Shift Location.--William H. Marshall reports from the Bear River Migratory Bird Refuge, Utah, that numbers and movements of birds during October, shifted materially several times. These shifts appeared to be correlated with weather changes, each storm usually bringing a decided change. Locations of concentrations and flight lines were mapped at all hours of the day. One set of night observations indicated that there were only a few birds on the refuge at that time, a fact which because of its importance, will have to be considered in future studies of migration, food habits, botulism, and all phases of ecology of the birds.

Build Turkey Catching Box.--A catching box to prevent wild turkeys from injuring themselves when being caught for shipment or study has been designed by C. O. Handley, leader of the cooperative wildlife research unit at Virginia Polytechnic Institute, Blacksburg, Va., and constructed by graduate students. Approximately 100 turkeys were handled in the box on October 13, without injury, except one small hen which injured a wing previously broken. The catching box is covered on the inside with opaque sacking material, and fits snugly over the end of the turkey pen. One of the sides has a swinging door that may be opened up inside of the pen. The turkeys are driven in quickly and the door dropped behind them before they are aware that they have been caught. The rounded corners of the catching box prevent the birds from crowding into the corners and breaking their wings.

Deer Checked in Maine.--C. M. Aldous, leader of the cooperative wildlife research unit at the University of Maine at Orono, established five checking stations in Maine for taking weights and measurements of white-tailed deer killed during the hunting season.

Identify Coyote Skin.--While on a New England inspection trip, Dr. Bell, Dr. Jackson, Mr. Miller, and Mr. Couch, in company with C. M. Aldous, Gustav Swanson, and Prof. Demeritt, stopped November 11, at a taxidermist's shop in Milford, Maine, and examined the pelt of a so-called "wolf" that had been killed at Argyle, Maine, a few days before. They identified the pelt as that of a coyote. Mr. Aldous says: "Since 1900 three unofficial reports have been made relative to wolves having been seen or killed in Maine. In 1901 a wolf was poisoned at Weld. In 1908 or 1909, a Mr. J. J. White is reported to have taken a wolf at Norway, Maine, and in Washington County, Warden Byron E. Feeney reports seeing two wolves as they

crossed the international boundary into Canada, sometime during the last 20 or 25 years. It is questionable whether the animals these men saw or captured were really wolves."

Addresses Biological Society.---Charles J. Rouse, transferred temporarily from Fairbanks, Alaska, to the Washington office, before permanent station assignment to Wichita Mountains Wildlife Refuge, Okla., delivered an illustrated address on November 28, at a meeting of the Biological Society of Washington, D. C. His subject was "Introduction of Musk Oxen into Alaska".

Confer at Mammal Laboratories.---F. C. Weens, New York, N. Y. and John B. Semple, Coconut Grove, Fla., visited the mammal laboratories November 28, and held separate conferences with Bureau officials on cooperative field work. Dr. H. W. Hann of the Zoology Department of the University of Michigan at Ann Arbor, conferred with A. H. Howell at the mammal laboratories on November 9.

### Food Habits Research

Reports on Turkey Research.---Beginning early in 1936, the Bureau has conducted a full-time investigation of the life history and management of the wild turkey in the Central States. In an interesting report to the Survey, H. L. Blakey, of the Section of Food Habits Research, and in charge of the investigation, tells of the significance of this research and some of the accomplishments thus far. Excerpts from his report are as follows:

"The Missouri Ozarks constitute the remnant of native wild turkey range in the North Central States, where existing turkey populations under properly directed management promise restoration of the native wild bird. A high-quality bird has been developed by Missouri and more than 12,000 birds have been liberated, thereby affording excellent opportunity for the study of artificial management."

"Headquarters, field transportation, and field assistance are furnished by the U. S. Forest Service at St. Louis, Mo., the investigation being designed to benefit approximately 4,000,000 acres of Ozark uplands in the Missouri National Forest Purchase units. Valuable assistance has been given by the Missouri Game and Fish Department, which has been very active in turkey management for 10 years.

"This investigation has developed much valuable life history information, and has concentrated on factors of range that affect the wild bird. Practically all of the Ozark wild-turkey range has been severely burned annually for many years. This has established a very open condition on a generally cut-over forest. These fires also deplete the thin soil severely, eliminate food and cover, and seriously affect turkey reproduction.

"The Forest Service fire-protection program is well established and, even under adverse conditions, indicates future success. Under such protection and management, the investigation is confronted with the problem of forest succession suitable to preservation of desirable open areas, and dispersion of turkey foods.

"A beginning has been made in the study of seasonal food relations, which indicate the turkey to be a very versatile feeder, showing preference for many

kinds of green-plant foods, fleshy fruits, seeds, (from tiny seeds of grasses that must be stripped off to the largest acorns) and insects. The reproduction of the wild turkey is high and natural survival is good, but the kill by man (Particularly the illegal kill) is the principal limiting factor. Losses incurred involve illegal kill, particularly high during the midsummer and late winter; destruction of eggs and nests by fire, and kill by predators, including the opossum, fox, wild dog, hog, and snake. Little, if any, loss from disease in the wild has been observed. The essential nature of large refuges for efficient native management or restocking has been established, with the minimum size of a desirable refuge indicated as one township. Successful restocking practices have been developed on the basis of using quality-stock birds as brood stock in unit range pens, permitting brood hen and flock to range out at will following natural reproduction."

A recent ruling by the Forest Service relating to the Missouri National Forest Purchase Units provides that no openings of 10 acres or less shall be planted except for a limited number of plantations valuable from a public relations or experimental standpoint. In planting larger areas and old fields, the policy shall be to leave 10 percent of the area in opens interspersed in such manner as to be less than 400 feet apart. This ruling, says Mr. Blakey, is particularly encouraging to wildlife management in this forest area.

Completes Food Survey.--Theo H. Scheffer left his headquarters at Puyallup, Wash., early in October on an extended trip into the northeastern part of Washington and completed a natural food resource survey of that section. The area covered included Calisocell Lake in the Spokane country and Onak, Osoyoos, Palmer, and several smaller lakes in the Okanogan drainage area down to Chelan. Later in October Mr. Scheffer collected wild celery (*Vallisneria*) seed stock from local lakes and in a plant introduction experiment distributed the stock in other ponds and lakes. He reports that this is the only introduced food plant for waterfowl that has taken hold and thrived thus far in the Pacific Northwest.

Waterfowl Scarce.--Reports from Johnson A. Neff of the Sacramento, Calif., office indicate waterfowl during the first half of November were unusually scarce in Glenn and Colusa counties. Mr. Neff says that in his seven years of experience he has never seen fewer ducks in this region. Water conditions, he reports were extremely unfavorable, and that the famous Spalding ranch was totally dry on November 6, except for a small area in one of the old lakes. Only 50 geese were seen on the ranch on that date, probably the smallest goose population ever recorded for the area in early November. The situation was reported to be more favorable later in the month, but generally poorer than last year.

Check Wildlife Population.--On November 20 and 24, nine members of the Food Habits Section made a preliminary study of the abundance of birds and mammals on the recently acquired refuge lands along the Patuxent River, near Beltsville, Md. This area, consisting primarily of wood land and worn-out farm land, will be used in experiments to develop native species of wildlife. It is planned to make a wild-



life census of this area each season to learn the results of the experiments. The bird population at present is rather low, but a few species of fur animals are plentiful.

Investigates Duck Sickness.--E. R. Kalmbach spent about two weeks in September, in the Salt Lake Valley, investigating a severe outbreak of botulism. Rescue work and frightening operations were conducted at the mouth of the Weber River. The disease was prevalent throughout the valley, and it is estimated that thousands of birds perished.

In reporting his studies of crow-waterfowl relationships on Federal refuges in North Dakota, Mr. Kalmbach says that contrary to the results obtained in Canada in 1934 and 1935, the crow played an unimportant role as a nest destroyer on the Lower Souris refuge. On the other hand, skunks, which were of little consequence in ~~Canada~~ the Canadian studies, assumed an importance comparable to that of the crow in Canada. In addition, these studies yielded information on the density of nesting populations, water levels that create optimum conditions for nesting, and other facts useful in refuge administration. The original plan of making comparative appraisals of crow-free and crow-infested areas on the refuges had to be modified because a shortage of water prevented the flooding of certain crow-infested units.

#### Distribution and Migration of Birds

Expeditions to Mexico.--Two expeditions of the Survey departed in December for Mexico to study conditions of waterfowl there. Associate Biologist Charles E. Gillham and his collaborator, Luther C. Goldman, will cover eastern Mexico, and Associate Biologist Luther J. Goldman, assisted by Field Assistant Frank Colcord, will cover western Mexico. Mr. Colcord has been detailed to this work by the Division of Game Management. Associate Biologist Logan J. Bennett will accompany the party to eastern Mexico, probably to the valley of Mexico, to study conditions of blue-winged teal.

Many Swifts, Terns Banded.--Since July 1, the records for more than 125,000 banded birds have been received. Probably the most outstanding individual reports are those for 21,503 chimney swifts banded in the vicinity of Auburn, Ala., by Harold S. Peters, and 11,206 common terns banded last summer at North Eastham, Cape Cod, Mass., by Dr. Oliver L. Austin.

Waterfowl Increase.--Preliminary reports received thus far on the number of waterfowl in this country confirm reports of the parties that surveyed the Canadian breeding grounds during the summer and reported increases in some species. Plans are now being made for the winter inventory.

Addresses Bird-banding Group.--Frederick C. Lincoln gave a brief talk on the growth of bird-banding activities and their importance to the Bureau at a meeting of the Eastern Bird Banding Association at Philadelphia, Pa., November 16.

Banding Returns Heavy.--Returns from banded ducks shot during the present season are being received on an average of 50 daily. These provide interesting information on speed of flight, longevity, and migration routes. Numerous ducks have been banded this season at the trapping stations established at migratory waterfowl refuges.

Interesting Banding Return Received.--Probably the most interesting and most remarkable return that has been received since the last issue of THE SURVEY is for a pintail banded on January 3, 1936, at Los Banos, Calif., and killed by a native at Indian Point, Siberia. Indian Point is near St. Lawrence Island. Probably the longest longevity record to be received is for a blue jay banded in Hartford, Conn., as a nestling in 1921, and kept in captivity as a pet. The bird died on June 30, 1936, being 15 years of age.

### Fur Resources

Arrange Trap Experiment.--On November 4 Frank G. Ashbrook discussed plans with representatives of an animal trap company at Lititz, Pa., for conducting a cooperative experiment to determine the efficiency of various traps for taking muskrats. Tentative arrangements for conducting an experiment at the Blackwater Migratory Bird Refuge, near Cambridge, Md., were made. This experiment, after it is finally outlined and approved, will be supervised jointly by the Survey and representatives of the trap company. From Lititz, Mr. Ashbrook proceeded to New York City, where he conferred with representatives of the fur trade on work of the Section of Fur Resources. He also conferred with the editorial staff of a national magazine on an article on fox farming that appeared in the magazine's December issue. The Section of Fur Resources, fur farmers, and fur tradesmen helped furnish material for the article.

Addresses Women's Clubs.--Early in November two women's clubs in Washington, D. C., heard Mr. Ashbrook explain the importance of fur animals as a natural resource. He spoke before the Zonta Club on November 4, and before the Western Club on November 9. Members of the Zonta Club are engaged chiefly in business and research work; those of the Western Cultus Club are natives of the West, principally of Idaho and Utah, or wives of men from this region.

Named Honorary Members.--George S. Templeton, director of the U. S. Rabbit Experiment Station, Fontana, Calif., and Chas. E. Kellogg were named honorary members of the American Rabbit and Cavy Breeders Association at the annual convention of the association at Fort Wayne, Ind., November 25 to 27. Similar honors were also bestowed upon the two Bureau men at the convention by the Flemish Giants and New Zealand Specialty Clubs.

At the convention Mr. Templeton explained the self-feeding system developed at the station, and displayed types of feed suitable for this system and a self-feeder developed by the station staff. Mr. Templeton pointed out that many rabbitries have adopted this system, and answered questions on rabbit production.

After attending the meeting of the American Society of Animal Production at Chicago, Ill., November 28 and 29, Mr. Templeton and Mr. Kellogg came to the Washington office to discuss the work of the station with members of the Bureau. On his way to Fort Wayne, Mr. Templeton stopped at Columbia, Mo., and conferred with Dr. A. G. Hogan on rabbit-nutrition research.

Mr. Kellogg visited two large fox farms in Wisconsin and Michigan on November 23 and 24, and obtained additional information on pelting operations before joining Mr. Templeton at Fort Wayne.

Visit Rabbit Station.--Dr. R. Dillon, chief of the Administration Division, and Dr. J.E. Shillinger and Dr. E. L. Vail of the Section of Disease Control, visited the Rabbit station at Fontana, Calif., in October, and reviewed the experimental program. Dr. Vail will be in charge of rabbit-disease investigations for the Bureau and will be stationed at Los Angeles, Calif.

Dr. Paul E. Howe, chief of the Nutrition Division, Bureau of Animal Industry, and V. C. Reeder, an official of the American Rabbit and Cavy Breeders Association, with headquarters in Kansas City, Mo., also visited the station in October. Mr. Reeder, who is a well-known rabbit judge, was impressed with the volume of experimental work that is underway at the station. Similar comments have been made by other officials of the Association, who visited the station during the year.

Discuss Organization Plans.--Director Templeton conferred with several leading rabbit breeders in Fontana, Calif., on October 19, on tentative plans for organizing a rabbit breeders association in the Fontana district. These breeders have adopted methods that the station has developed for producing high-quality fryers, and feel that an organization would help develop a wider market. On October 4, Director Templeton and Superintendent Allan Sutor of the Rabbit Experiment Station, attended a banquet of the Southern California Rabbit Breeders Association at Pomona.

Visit Fur Experiment Station.--Pupils and teachers of the Greenfield Center School in New York, visited the U. S. Fur Animal Experiment Station on November 6, and observed the animals there and methods used in conducting experiments. After the visit the pupils wrote letters to Director Bassett informing him what they had learned. A few weeks before the visit Director Bassett talked at the school on fur farming.

Aids Research Center.--Director Templeton of the U. S. Rabbit Experiment Station conferred with Doctors Wade H. Brown, H. S. N. Green, and J. A. Saxon of the Rockefeller Institute of Medical Research at Princeton, N. J., December 4, on research work that is in progress at the experiment station. This institute is en-



gaged in research on rabbit diseases and their relations to human beings. Mr. Templeton supplied the institute with information on nutrition for use in its laboratory work.

Women's Club Visits Station.--Members of the Junior Women's Club Federation of Southern California held their annual meeting at Fontana, Calif., October 24, and during the afternoon 110 members of the group visited the Rabbit Experiment Station. They were supplied with information on the rabbit industry and were shown the experimental work in progress.

Director Templeton reports that all three of the main arterial highways in Fontana are now marked with signs that direct visitors to the station. The signs were posted by an automobile club.

Elected to Civic Post.--Director Templeton of the Rabbit Experiment Station was recently elected vice-president of the Fontana, Calif., Chamber of Commerce. He has been active in the organization, particularly as chairman of the membership committee.

#### Disease Control

Transfer Research Laboratory.--Dr. J. T. Shillinger, in charge of the Section of Disease Control, recently returned from a month's trip to California, where he arranged for the transfer of the disease research laboratory from Fontana to Los Angeles. Dr. Edward B. Vail, a new employee of the Bureau, will be in charge of the laboratory and began work on October 20. Dr. F. D. McKenney, formerly in charge of this laboratory for the past 5 years, will be transferred to Washington shortly.

Arrangements were also made by Dr. Shillinger for the establishment of a disease-research station at the Bear River Migratory Bird Refuge, at Brigham, Utah. This work will be in charge of Dr. Don Coburn, of the Michigan Conservation Department, who is to be appointed to the Section of Disease Control.

Dr. Shillinger spent several days in Wisconsin and Michigan studying conditions responsible for unusual losses this year among silver foxes. He also lectured on disease control at several State colleges and before fur producers' associations in the central and western States. Increased interest in the Bureau's work in disease research and control was noticed by Dr. Shillinger on this trip. He reports also that during his trip in the field he received a large number of requests for cooperation in disease control.

LAND ACQUISITION

On Flood Control Committee.--Mr. Dieffenbach, chief of the Division, has been appointed a member of the Department of Agriculture Committee for the Valuation of Lands in the Flood Control Area. This committee has been named under the provisions of the Overton Flood Control Act for the control of floods in the alluvial valley of the lower Mississippi River. Mr. Dieffenbach recently inspected this river area and has named Paul T. Kreager as his representative to make the appraisals. Mr. Kreager is being assisted by Joseph O. Bridges and Alastair Campbell, both members of the Survey field force. Norville E. Shearer, of the San Antonio office, is also assisting in the drafting work.

Inspect Surveying Work.--During November Mr. Dieffenbach made an inspection tour that included Utah, Nevada, Washington, Oregon, California, Texas, Louisiana, Mississippi, and Missouri. Arthur A. Riener has inspected surveying work on refuges in Delaware, Texas, Louisiana, Utah, Wyoming, Idaho, South Dakota, Missouri, Florida, and Georgia.

Complete Field Work.--Field Work in surveying has been completed on the Moosehorn Refuge in Maine, the Bombay Hook Refuge in Delaware, and the Okefenokee Refuge in Georgia. Field parties are now working at Lake Mattamuskeet in North Carolina, on the Savannah River Wildlife Refuge in South Carolina and Georgia, and on the St. Marks Refuge in Florida.

Detailed to Washington.--Albert J. Rissman, of the San Antonio office, and Charles S. Cook, of the St. Louis office, have been detailed to Washington in connection with the Swanquarter fire investigation case.

This lawsuit, Panlico Timber Corporation vs. United States, was deferred for a number of years and finally came to trial the week of November 30. R. M. Rutherford headed the Bureau's witnesses. The services of Dr. Alfred P. Dachnowski-Stokes, physiologist of the Bureau of Chemistry and Soils, and an authority on peat, were obtained as those of an expert witness. Another expert witness was Howard R. Krinbill, of the Income Tax Unit, Bureau of Internal Revenue.

On D. C. Detail.--Kenneth C. Kern, of the San Antonio office, is on a detail in the Washington office to assist in the preparation of survey descriptions.

## MIGRATORY WATERFOWL

Inspects Refuges.-- J. Clark Salyer, II, chief of the division, inspected refuges in North Carolina, South Carolina, Georgia, and the St. Marks and Sea Horse Key refuges in Florida on a trip along the East Coast, August 29 to September 11. Early in October he left on an extended refuge inspection trip through the Western States.

During the summer Mr. Salyer inspected a suggested refuge site at Goose Pond, Ind., and stopped at the Chautauqua refuge in Illinois, to instruct the field men there. At Green Bay, Wis., he obtained data on the Long Tail Lighthouse Refuge that will be administered as a waterfowl refuge by the Bureau. It was formerly under the administration of the Lighthouse Service. In Michigan, he conferred with Bureau and State officials on proposed changes in the boundary of the Seney Marsh refuge. Before proceeding to North Dakota, Mr. Salyer inspected the Upper Mississippi River Wildlife and Fish Refuge. In North Dakota, he inspected the larger purchase units and the work accomplished on the easement areas by W. P. A. labor. He also inspected the Forest Service nurseries that have supplied the Bureau with millions of seedlings for refuge development in the Great Plains area. In Montana, Mr. Salyer visited the Medicine Lake Refuge, and in South Dakota he visited all five of the Bureau's refuges there.

On this trip Mr. Salyer also conferred with conservation officials of Minnesota on the activities at the Medicine Lake Refuge; inspected the Pathfinder refuge in Wyoming, Crescent Lake, Valentine and Lake Minnetair refuges in Nebraska, Squaw Creek refuge and the proposed Marias de Cagnas refuge in Missouri. In Iowa, he consulted State officials concerning the Green Bay bottoms and the Ruthven marsh area. Before returning to Washington, Mr. Salyer conferred with Dr. Gabrielson at Chicago.

Inspects Louisiana Refuge.--Administrative Officer Chester A. Leichhardt returned December 2, from a field trip to Region 5. He was impressed with the improvements being made at the Delta Migratory Waterfowl Refuge in Louisiana by a W. P. A. camp of 208 men. These men have their living quarters in quarterboats furnished by U. S. Army engineers. At the time of Mr. Leichhardt's visit the men were engaged in razing the old quarantine station building and salvaging the lumber for building an office and three residences for refuge personnel; building dykes and landscaping; and constructing a wharf, machine shed, tool house, pump house, and a lookout tower. Sixteen miles of exterior fencing have been completed, and 50 miles of the refuge boundary have been posted with refuge signs on creosoted posts set at intervals of 220 yards. Supplies for the W. P. A. camp must be taken to the project from New Orleans, a distance of 100 miles. One of the crews is composed of Negroes, another of Creoles, who converse in French, and the other two of white men. The quarterboats are equipped with electric lights, running water, and bathing facilities. Rain water is caught for drinking and cooking purposes. The crews are well-fed with food furnished from New Orleans to which is added a goodly supply of fish, shrimp, and crabs taken locally. The sum of 45 cents is deducted daily from each man's daily pay for meals and lodging. The Biological Survey transports the



men by truck and boat from New Orleans to the project at the beginning of their work period, and after they have completed their allotted time they are returned to New Orleans.

A registered nurse operates a well-equipped first-aid station at the refuge, but the men who suffer serious injury or illness are taken immediately to the hospital at New Orleans, for examination and treatment. The morale of the men on this project is excellent, due largely to their accommodations and food and the interest of Junior Refuge Manager Sutherlin in their welfare. Mr. Sutherlin explained to the men that they are playing an important part in the development of the Bureau's program for waterfowl restoration. Approximately 250,000 blue geese and a large number of ducks of various species are now concentrated on the refuge.

Observe Refuge Development.--Accompanying Regional Director Roy Moore, Mr. Leichhardt spent four days during November, at the White River Migratory Waterfowl Refuge in Arkansas. In addition to Superintendent H. W. Terhune and his staff, there are two C. C. C. camps developing this refuge. Another camp was to be added early in December. The C. C. C. men are constructing roads, trails, and fences; building boats; erecting a saw mill; posting the refuge; and protecting approximately 50,000 waterfowl that are now concentrated on the refuge. Mr. Leichhardt reports that many hunters are in the Stuttgart and Dewitt areas, seeking their share of the mallards that frequent the rice fields. Mr. Moore and Mr. Leichhardt also inspected the Big Lake refuge near Blythesville, Ark. Water is abundant on this refuge, but that it has few birds at this time. Approximately 1,200 blue-winged teal, however, were concentrated on this refuge a short time ago. Willows that were cut on several hundred acres on this area a few years ago have not reappeared.

Elmer Visits Refuge Areas.--A. C. Elmer, assistant chief of the division, inspected the Lake Mattamuskeet Migratory Waterfowl Refuge in North Carolina, early in November. During the summer and early fall he spent considerable time in inspecting refuge areas in the Central States and the West. He spent several days in Michigan, where he conferred on matters pertaining to the Seney marsh and St. Clair flats refuges. He also visited the Upper Mississippi Wildlife and Fish Refuge and inspected the Trempealeau refuge in Wisconsin, by boat. This was followed by inspection trips to refuges in South Dakota, Nebraska, Idaho, Montana, Oregon, California, and Utah.

Amos B. Emery also has inspected the work of C. C. C. camps on the refuges. States that he has visited include Iowa, North Dakota, South Dakota, Nebraska, Minnesota, Michigan, Montana, Idaho, Utah, Nevada, California, Oregon, Washington, Illinois, and Missouri. Inspections of the Blackwater Migratory Bird Refuge in Maryland have been made by E. O. Gustafson. On his second trip to this refuge he found that the work of C. C. C. camp there had progressed rapidly. One of the projects undertaken at this refuge during the last few months has been the creation of fresh water ponds through the development of dikes and levees. With its work completed on December 8, the camp has been transferred to the Jefferson National Forest in Virginia. Refuges inspected by P. S. Munk Pederson included Lake Ipsom in Tennessee, White River in Arkansas, Squaw Creek in Missouri, and Trempealeau in Wisconsin.

Appointments and Transfers.--Watson E. Beed and Leonidas M. Stokes have been appointed junior refuge managers at the Waubay Migratory Waterfowl Refuge in South Dakota, and the White River Migratory Waterfowl Refuge in Arkansas, respectively.

Francis C. Gillette has been appointed associate refuge manager with offices at Minot, N. Dak., and serves as an assistant to Burnie Maurek, who directs the general waterfowl refuge activities in North Dakota.

Harley Lawrence is in charge of the Lake Mattamuskeet Migratory Waterfowl Refuge in North Carolina, having transferred from the White River Migratory Waterfowl Refuge in Arkansas.

George L. Girard, junior refuge manager, has assumed charge of the Pablo, Nine Pipe, Pishkin, and Willow Creek refuges in Montana. His headquarters are at Ronan, Mont.

Hugh Terhune has transferred from the Alaska Game Commission to this Division to become superintendent of the White River Migratory Waterfowl Refuge in Arkansas.

Andrew E. Schmitt has transferred from the Delta Refuge in Louisiana, to the Upper Mississippi Wildlife and Fish Refuge.

John F. Herholdt transferred from his station at the Jones Beach Refuge to the new Bombay Hook refuge in Delaware, where he is in charge.

William E. Achernecht, who has been stationed for the past two years at St. Louis, Mo., transferred from the Division of Land Acquisition on November 28, to become connected with the Washington office of this division.

Additional temporary game agents were appointed for the waterfowl hunting season at the White River, Tule Lake, Red Rock, Upper Mississippi, Chautauqua, and Lake Mattamuskeet refuges.

Completes Detail in Washington.--Ray C. Steele, who was detailed to the Washington office from his post at Winona, Minn., completed the organization of a W. F. A. work relief program of improvements on 55 of the Bureau's refuges in September, after which he returned to Winona.

Personnel Notes.--Employees added to the Division during the summer and fall include Eleanor Kennedy, Ruth Riley, and Alexander Ellerbe.

Joseph Walters is employed in the division's file room, having transferred from the central mail and file room.

The following persons have left the division: Miss Savage has been transferred to the Game Management office in Denver, Colo.; Gertrude Cavanaugh has transferred to the A. A. A.; and Joseph Loeb is now in the Post Office Department.

#### GAME MANAGEMENT

Talks on "Western Farm and Home Hour."--Hugh Worcester, game management agent in California, took part in the broadcast of the "Western Farm and Home Hour" on October 29. In his talk on "The Duck Season Opens Next Sunday," Mr. Worcester interpreted a number of the regulations for this season.

Game Management Agents and Game Preserves

Antelope Increase.--E. R. Sans, superintendent of the Charles Sheldon Antelope Refuge, Nevada, reports more antelope on the refuge than he has ever seen there at one time. On November 17, he saw from 1,200 to 1,500 antelope on the area within one mile of Hobbie Springs. Mule deer are increasing on the refuge and one doe with two fawns made her home in a thicket across the meadow from headquarters during the summer. She took the fawns to feed on the lawn in front of the headquarters house early in September. Superintendent Sans says, "I quit cutting the grass and by the last of September, we counted 12 deer on the lawn at one time. They soon cleaned up all the flowers and shrubs and were then satisfied to eat the lawn grass."

Elk Appear at Refuge.--A few elk appeared at the Elk Refuge in Jackson Hole, Wyo., at the end of November. These animals fed at night on the alfalfa field in the upper portion of the Izaak Walton League addition to the refuge and returned to the nearby foothills during the day. More Canada geese remained on the refuge this autumn than in previous seasons. On the evening of November 27, 304 geese were counted on the meadow near the headquarters. At the close of November, there was no snow in Jackson Valley and only a light fall of snow in the high mountains.

Injured at Sullys Hill.--On November 4, three of the W. P. A. workers employed on road work at Sullys Hill Game Preserve, N. Dak., were injured by a caving in of gravel that apparently had been loosened by dynamite. The men were taken to the hospital at Fort Totten, and were able to return to their homes within a few days.

Law Enforcement

Enforcement Personnel Busy.--As a result of the active and efficient cooperation of the enforcement personnel, the Game Management Division finds it impossible to keep currently informed on the many types of reported violations of waterfowl regulations that are being presented for consideration. A large number of cases have been instituted this season against violators, and in many cases successful prosecutions have been obtained.

Injunction Denied.--A complaint to enjoin enforcement of the Migratory Bird Treaty Act regulations on certain properties in California, was dismissed in Federal court for the Southern District of California, on November 18. A portion of the opinion by the court is as follows: "It would seem, in view of the conditions of the treaty, that it is contemplated that the United States may restrict the taking of edible wild fowl through certain specified periods of time and may create closed seasons when such game may not be taken at all. It appears logical that where an open season is provided, the qualification be imposed as a condition that during such open season baiting or luring of the wild fowl should not be permitted, because plainly that would result in a greater number being collected together and captured. The regulation referred to applies generally to all sections of the United States."



Six Sentenced for Shooting Sora.--Six persons charged with killing sora at night pleaded guilty when they were arraigned on October 26, in Federal court at Wilmington, N. C. They were sentenced to 30 days in jail each. The beginning of the jail terms was delayed until January 15, 1937 to enable the defendants to harvest their crops. This court also fined two other persons when they pleaded guilty on October 5, to charges of violating waterfowl regulations. For killing two wild ducks in close season in Hyde County, N. C., one of the defendant was given the choice of serving 60 days in jail, or paying a \$50 fine. The other defendant, charged with unlawful hunting of waterfowl on a portion of the Lake Mattamuskeet Migratory Waterfowl Refuge, was fined \$35.

Draws Heavy Fine and Jail Sentence.--Failing to appear for sentence at an appointed time during the November term of Federal court at Jackson, Miss., a defendant previously convicted on charges of killing wild ducks in close season and hunting without a migratory bird hunting stamp on his person, was held in contempt of court and sentenced to serve 6 months in jail and fined \$750. The court described the defiance of the order for appearance as "outrageously in contempt", and added that after the man had been convicted it was intention to punish him with only a fine.

Find Duck Traps.--In a drive against duck trappers on the eastern shore of Virginia, game agents on November 20, found 12 traps containing 151 live and 4 dead ducks. Eight traps had been found on the same area on November 8. Traps were found set up again on November 23. The agents waited for the trappers, but they did not appear.

Hunted on Refuge.--Two persons charged with killing mink and rabbits on the Big Lake refuge area in Arkansas, were arraigned in Federal court at Jonesboro, Ark., on November 14. They pleaded guilty and were fined \$25 each.

Served Coot Stew.--A game management agent stopped at a restaurant in Wisconsin on October 10, and asked for some sandwiches. The proprietor suggested "mud-hen" or coot stew. The agent accepted his suggestion and located a State Warden. This brought the restaurant proprietor into a State court, where he was fined \$200 and costs for sale of waterfowl.

Works Out Fine.--On evidence obtained by a Federal agent cooperating with State officers, a gunner in Ohio was arraigned on a charge of hunting without a State license and hunting on private property without the owner's consent. Upon a plea of guilty in a State court on October 26, the defendant was fined a total of \$221.10. He defaulted payment of the fine and was committed to jail to work out the fine at the rate of \$1 a day.

Four Fined \$200 Each.--On November 8, at a gun club in California, Federal agents and State wardens found 4 men in possession of 18, 20, 30, and 54 dead ducks, respectively. The men were arraigned in a State court at Fairfield on November 4, and fined \$200 each.

Draws Heavy Fines.--After being apprehended by State and Federal officers as they were taking ducks by means of bait, four persons were arraigned in a State court in Illinois, on November 27, and fined \$100 each together with costs.

Baited Ducks.--On November 7 an agent found three persons in Multnomah County, Oreg., taking wild ducks by means of bait. Arraigned in Federal court for the District of Oregon, on November 13, the hunters pleaded guilty and were fined \$100 each.

Hunted Coots in Close Season.--For hunting coots during close season in Pointe Coupe Parish, La., a defendant was arraigned in Federal court at Baton Rouge, La., on November 12. He pleaded guilty and was sentenced to serve 5 days in jail.

Fined for Selling Ducks.--A restaurant operator charged with the sale of six wild ducks was arraigned December 1, in Federal court at Chicago, Ill., and upon pleading guilty was fined \$75.

Fined at Baltimore.--Cases successfully concluded during October in Federal court at Baltimore, Md., and fines imposed were as follows: Hunting without a stamp, 6 (\$1), 2 (\$5), 1 (\$10); hunting without a stamp and with unplugged gun, 1 (\$5); hunting with gun not properly plugged, 1 (\$1), 7 (\$5), 3 (\$10); hunting over live decoys, 1 (\$25 and costs); hunting after 4 p. m., over bait and live decoys and with gun not properly plugged, 2 (\$25); hunting over bait and with gun not properly plugged, 1 (\$250).

Lacey Act Violations.--At the October term of Federal court for the Western District of Michigan, an indictment charging conspiracy to violate the Lacey Act in connection with the transportation of skins of fur animals was returned against 6 persons by a grand jury. Three of the defendants are from Wisconsin and the others from Michigan.

Possessed Beaver Skins.--A defendant arraigned on November 17, in a State court in New York City, on a charge of illegal possession of beaver skins, entered a plea of guilty and paid a fine of \$50. Evidence was supplied by a Federal agent.

Shot Ducks in Close Season.--Pleading guilty to a charge of shooting ducks in close season, a resident of Texas apprehended in Dona Ana County, N. Mex., was fined \$50 on August 5, in Federal court at Santa Fe, N. Mex.

Baited Geese.--Four persons charged with hunting wild geese by means of bait pleaded guilty on September 22, in Federal court at Danville, Ill., and were fined \$10 each, together with costs.

Hunted in Close Season.--Charged with hunting and killing wild ducks in Louisiana in close season on February 2, a defendant pleaded not guilty when arraigned in Federal court at Monroe, La., on October 5. Tried by a jury he was found guilty and sentenced by the court to serve 60 days in jail.

### Importations

Change Importation Season.--The regulations governing the importation of bobwhite quail from Mexico, in effect since December 1927, were amended on October 23, by making Nogales, Ariz., an additional port of entry and changing the importation season to conform with the Mexican exporting season. Under a Mexican decree issued last April, the exporting season of that country now extends from November 1, to the last day of February. Thus far, the Mexican government has granted export permits for 89,000 quail, with the restriction that the birds be used solely for propagation or stocking purposes. Arrangements were made with the Bureau of Animal Industry for its inspectors to inspect the importations. During November a total of 1,212 quail were entered, according to the inspectors.

Discover Forbidden Species.--Several attempts have been made recently to bring in prohibited species of animals and birds. Eight flying foxes arrived in a shipment from India on the motor ship Galveston on August 28 and were not only refused entry, but were killed by the customs officials at the dock. The dead bodies, however, were permitted to be delivered to the Staten Island Zoological Society for scientific research work. About September 4, 2 meercats (Cynictis poricillata) arrived at New York on the Steamer City of New York from South Africa, and also were killed by the customs officials. One crested myna (Aethiopsar cristatellus) was refused entry at San Francisco about August 20, and a bullfinch brought by a passenger on the Steamer Queen Mary, which arrived at New York on September 22, was refused entry and killed. Two European yellowhammers and a bullfinch, discovered in a shipment of canaries arriving at New York, on October 19, were also excluded.

### Predator and Rodent Control

Mice Damage Heavy.--District Agent G. C. Oderkirk reports that during the 1935-36 winter, field mice in Minnesota, Wisconsin, and Michigan inflicted considerable damage to orchard trees. In many instances mice had completely removed the bark from the ground level to a point 5 or 6 feet high on trees 3 to 15 years old. The snow had reached a depth of six feet in many places and the mouse damage extended from the ground to the snow level. During the past fall mouse infestation in Michigan appeared to have reached a low point, but in Southern Indiana and Ohio the rodents are more numerous than a year ago.

Continue Cooperative Work.--District Agent C. R. Landon reports that cooperative predatory control work has been extended in Pecos and Webb Counties for another year beginning September 1, 1936. Pecos County appropriated \$4,200 for this work, and Webb County, \$3,312. During the past year, 68 bobcats, 729 coyotes, and 1 mountain lion were taken in Pecos County, where the average catch per man was 114 predators. In Webb County, where the infestation of predators is heavier, 228 bobcats, 1852 coyotes, 15 mountain lions, and 6 cougars were taken and each trapper caught an average of 350 predators.



W. P. A. Project Approved.--District Agent Adolph S. Hamm reports that a W. P. A. project for the control of predators in Wyoming began July 16 on a State-wide basis. The project called for the employment of four supervisors and permitted a total of 425 man months of employment with a total expenditure of \$22,400. At the close of September, 4 supervisors and a total of 49 hunters were employed. Mr. Hamm says that this project has permitted the continuation of predator control work in many areas of the State, where coyotes were causing heavy losses and where the work could not have been extended without the project. A large number of the men on this project were formerly employed by the Bureau before it became necessary to curtail this activity because of a shortage of funds. From July 16 to September 30, these hunters killed 1571 predators.

Trees Trap Coyotes.--Junior District Agent Orin L. Robinson reports finding the body of a coyote wedged tightly between two trees. The animal apparently attempted to jump between the two trees growing closely together, became lodged, and starved to death.

Notes on Coyote Depredations.--District Agent Adolph S. Hamm reports severe coyote depredations on watermelons, red plums and green beans.

A farmer living southwest of Cheyenne, Wyo., complained of a coyote destroying his watermelon patch. This farmer considered himself fortunate in being able to grow watermelons at a high altitude and objected to the coyote appropriating the melons before he could pick them.

Near Valentine Lakes, Nebr., Hunter Jack Boulinghouse shot a coyote in a plum thicket that was picking and eating red plums. When its stomach contents were examined, a large quantity of plums and plum seeds were found.

Hunter Henry Whalen reports that a farmer in his vicinity had a green bean crop completely denuded of green beans by coyotes.

Detailed to Washington.--District Agent W. E. Riter arrived in Washington, D. C., on October 31, and remained at the Survey headquarters until December 2. While in Washington, Mr. Riter assisted in the routine work of this office and had an opportunity to become familiar with procedures for conducting the activities of the Section of Predatory Animal and Rodent Control. He also had an opportunity to become familiar with other activities of the Bureau.

Large Predator Catch.--District Agent W. E. Riter reports that during September, Hunter Glen Sutton took a total of 242 predators, consisting of 230 coyotes and 12 bobcats. Fourteen of these were shot and the remainder trapped. This is the highest monthly take reported by any hunter during the history of the Bureau's cooperative predator control operations. Hunter Sutton was employed 13 months during 1925 and 1926, and was again employed from April 1930, to the present time. On September 30, he had taken a total of 2,263 predators.







